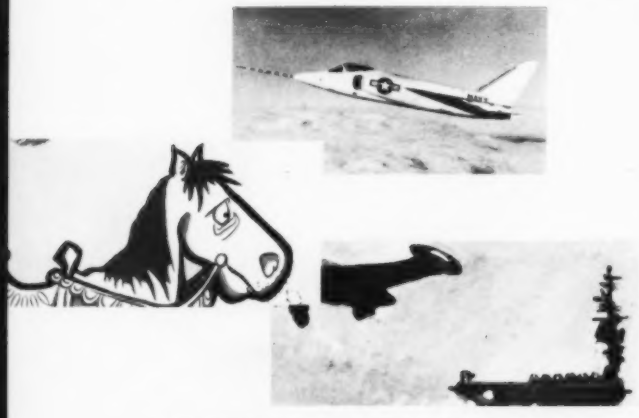
approach

THE NAVAL AVIATION SAFETY REVIEW

October 1958

NAVAER-00-75-510



Credits: Painting on page 41 from the Navy Combat Art collection by Lt. R. A. Genders, USNR, Approach art director

Vol. 4 **approach** No. 4

Published by U.S. Naval Aviation Safety Center
NAS, Norfolk 11, Va.

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Purposes and Policies: APPROACH is published monthly and contains the most accurate information currently available on the subject of aviation accident prevention. Contents should not be construed as regulations, orders, or directives. Material extracted from Aircraft Accident Reports, (OpNav 3750-1), Aircraft FLIGA Report (3750-10), Medical Officer's Reports (OpNav 3750-7/8) and Anymouse (anonymous) Reports may not be construed as incriminating under Art. 31, UCMJ. Photos: Official Navy or as credited.

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Correspondence: Contributions are welcome as are comments and criticisms. Views expressed in guest written articles are not necessarily those of the Naval Aviation Safety Center.

Printing: Printing of this publication approved by the Director of the Bureau of the Budget, 31 Dec. 1957.

Subscriptions: Single copy 30 cents; 1-year subscription $3.25; 75 cents additional for foreign mailing. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Library of Congress Catalog No. 57-60020.

LETTERS

Claim to Highest Takeoff

Sir:

Friday 30 May 1958 I had a fuel pump failure in a TV-2. This occurred during a cross-country flight to Denver from NAS Oakland. The malfunction was noticed approximately 120 miles west of Denver. I landed, without damage at Jackson County (Walden) Colorado. The runway is a dirt grass strip 5900 feet long, field elevation 8144 feet. Repair crews were sent from NAS Denver to service and repair the faulty fuel pump. I was cleared to takeoff from U. S. highway 125 which runs perpendicular to the Jackson Air Strip.

Upon returning to NAS Oakland a local newspaper reporter informed me that this may have been the highest successful takeoff and landing on record for a jet aircraft. Information pertaining to this is not available. If possible could you please check your records and find out if this is true . . .

1ST LT. JOSEPH PERRY,
USMCR, VMF-141,
NAS Oakland, Calif.

● **Any challengers?**

Re: Guard & Proficiency

Sir:

There seems to be a couple of flaws in two of the accidents analyzed in Truth and Consequences in the April APPROACH.

"Baited Hook," FJ-4 running off a wet runway after a GCA approach. The board knocked the pilot for not monitoring Guard channel. A common practice among more experienced pilots is not to monitor Guard channel in the GCA position. Guard channel is normally used so indiscriminately that it continually cuts in on GCA instructions. This is especially bothersome on final.

As far as the tower preventing an accident on the landing runout by giving instructions to the pilot to drop the hook—it seems as though too many military tower operators are trying to get in the cockpit with the pilot. The pilot had probably never had the point

brought out to him that landing after a GCA approach, he is losing about 1000 feet of runway length and "hotter" than normal. He also has a wet runway to contend with in most cases. This all adds up to a booby trap for the uninitiated.

F4D and "Stack Turbulence": I would like to know what this very experienced naval aviator had in mind flying a night CAP flight after no CV landings in 30 days. It probably wasn't his decision. I believe the only logical cause of the accident was loss of pilot proficiency. On the first part of our squadrons "Med" cruise, we became very stale tailhookers. All of our "dive for the decks" and hard landings came after 2-4 weeks of no flying.

VA PILOT

Theory

Sir:

1. A request for simplification of the theory of lift.

2. To think of air moving over an airfoil (Molecular Buddy Theory) is only slightly less confusing than to think of air movement plus airfoil movement.

3. The molecular buddy theory is deceptive. To illustrate—Two molecules as they are separated by the airfoil leading edge, one to follow the upper the other to follow the lower surface, pledge to meet again at the airfoil trailing edge. This implies (assuming a chord of 20 feet) a trip by each molecule of 20 feet plus chord camber deviation. Since the molecule which took the longer upper route has further to go, he travels faster.

4. This assumes intelligence in molecules which allows them to solve time and rate problems with an unknown distance.

5. How much more simple for the air to be static except for the movement imparted to it by the air foil. The shape, size, speed, of the airfoil and the air density are the only factors that determine the air's action. The air's action determines its own reaction. (Action equal and opposite reaction).

To stop the airfoil for a moment we have as far as air is concerned a vacuum. This is an abnormal condition in which the air (as soon as we start our airfoil moving) returns to a normal condition. The top of the wing with its greater

camber creates more and faster action which causes more and faster reaction.

6. I don't say this is so, but I would like to see it kicked around.

JAMES H. FELDMAN, ADC
VR-21, Barbers Pt., T. H.

Atmosphere

Sir:

In the Weekly Summary of Accidents for 9–15 December 1957, the feature articles deals with a rather ludicrous comparison between a "professional" surgeon and the "non-professional" aviator . . . The March issue of APPROACH contains a similar article. That I disagree with this article is obvious. However . . . I feel that his error does hi-light the real problem.

Rather than derisive exhortations towards a more professional attitude, let's explore the major reasons for the lack of this attitude. It has occurred to me that the principal factor which is lacking in this case and which differentiates the professional from the non-professional is atmosphere. Undergraduates in all fields leading to recognized professional status are steeped in the atmosphere of their profession from the very beginning. Furthermore, they can observe the members of their profession who have preceded them and be inspired by the atmosphere in which they work, live and study.

A professional atmosphere is not something which each class creates in its own time. It is the heritage of the profession to which they aspire. In short, we do not have professional aviators because our trade has not yet assumed the status of a profession. Until the leaders of our guild decide to elevate the status of the naval aviator and to take the necessary forthright action to create the professional atmosphere, it is quite absurd to encourage the younger members to aspire to something which they cannot possibly attain.

Please do not mistake my critical view of the present situation. No one is more in favor of professionalism. This issue is the method by which it is to be attained.

It is my contention that our sense of values in this case is sharply out of line with reality. Take our young aviators for example. After a modest flight training program they are sent to the fleet to become specialists in aerial warfare. They become experts all right; but in legal matters, personnel, education, public information, administration, inventories and accounting systems, charity drives, character guidance, PAMI, and a host of other paper functions. True, some paper has its place and we'd sorely feel the absence. But what good will this crop of young naval administrators do us when they've been transferred to Fort Rosecrans or Arlington?

What our young aviators need is an internship or better still a residency in aviation. Put them in an atmosphere where they can live and breathe aviation and are free of distracting trivia. It might be worth noting that the medics usually give Navy paperwork as their principal reasons for leaving the service. Naturally, it pollutes their professional atmosphere. They know that the interference with their work is intolerable. We, the aviators, know it too. But where would the country be if we all walked out because of the pollution?

Now the normal reaction to an argument such as this is that the

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: APPROACH Editor, U. S. Naval Aviation Safety Center, NAS Norfolk, Va. Views expressed are those of the writers and do not imply endorsement by the U.S. Naval Aviation Safety Center.

Continued from preceding page

CO should exercise judgement, assign priorities . . . ad infinitum—to see that his command isn't a ground-bound paper mill. But before you pile another straw on the CO, look at the directives that come in from above by the bushel. He is ordered to do this, report that, assign such and such as a primary billet, monitor something, insure that everyone does something or other . . . and submit reports on everything—yesterday!

The people who generate the tasks which are crippling our squadrons and killing young pilots, are sincere enough. They have problems and are soliciting help. But, can we afford to squander aviators in this manner? This is where our sense of values must be reassessed once and for all. To be perfectly frank, are such things as home town news releases, the historical report, inventories of athletic gear, to name but a few, more important than the combat readiness of the fleet?

Perhaps the sincere paper emperors will take the stand that their particular interests CAN'T be set aside. This is obviously a decision to be made at the highest levels, but with the bloody arguments being presented daily it appears to me that the only thing that we CAN'T do is continue in the present direction. We are on the receiving end of an operation Turkeyshoot. How many more months of this can we sustain?

If naval aviation is to survive, the professional atmosphere must be established, and soon. Then within this atmosphere the generation of professional naval aviators that so many people dream of, can be conceived.

Simply stripping away all the nonessentials will not alone suffice to achieve the professional attitude. The serious study of aviation must become the way of life of the PNA.

The idea is not new. Some years ago squadrons placed great emphasis on it. Ensigns' journals were devoted to aircraft systems, armament, naviation and flight procedures. The studies were specialized and intense. Pilots were encouraged to devote considerable time to the study of their aircraft. And these planes were about as complex as a boxkite when compared to present-day machines. Yet, today's JO's can spend but a fraction of the time studying the airplanes they fly.

Of course, in those days most of the post-war paper mill hadn't been built and few people then took seriously the idea of "Line Officer first—then Naval Aviator." These were things that could and did come later. Now, the JO's are required to begin submitting a well-rounded JO course as soon as they hit a squadron. They burn up precious hours on all sorts of shipboard subjects long before they ever go near a ship. The youngsters may be getting a fine foundation if they live long enough. But the accident record doesn't speak well for the results.

Assuming that there is at least a little interest in this subject up on high, I should like to conclude with a few thoughts on methods of studying modern aircraft, systems and related subjects. Abandon the comic-book approach to a technical field. The easy reading qualities of "APPROACH" and "Flyboy" are fine. But occasionally "Flyboy" lets the facts be obscured among the verbiage and the profuse apologies for mathematics.

When an article merits a reprint in "Flyboy" it is vital and should be distilled and possibly have the technical points broadened. If we are to become PNA's, we should be able to handle professional journals. The style of the numerous mathematics and physics journals would be more appropriate. Anyone who has to have a cartoon on every other page obviously has little potential. In fact, why not publish books on pertinent naval aviation subjects in the same format as physics and engineering texts and reference works?

It has been my intent to attempt to point out a possible path to a solution of what must be naval aviation's most critical problem. I trust that my criticisms will be accepted in their intended manner; pointed but constructive.

CRUSADER

Boost!

Sir:

We use the 3350 engine with power recovery turbine which is basically the same engine as used on the AD and subject to the same type failures.

This engine needs a lot of looking after by people who know what they are doing. I firmly believe that a good maintenance outfit can prevent 80 percent of your engine failures before they happen, provided the pilots will play ball with the maintenance gang and report any over-boost when they return from a hop. If AD pilots are overboosting this engine I can well understand why so many failures.

I firmly believe that if this engine is flown by the recommended Torque Pressure settings that the engine life will be substantially prolonged and many less engine failures will occur. The TP gage was installed to prolong engine life—it will also give advance warning of engine failures; it is also used to arrive at the proper leaning procedures for long range flight.

Question: Do all AD's have TP gages?

Do all AD pilots know what they are really for and what they can do for the pilot?

Do they realize the seriousness of an engine over-boost?

L.W.F.

It's Flight Manual Now

Sir:

There have been several references in your Headmouse column and elsewhere in APPROACH to the "Pilot's Handbook." The title "Pilot's Handbook" was changed to "Flight Handbook" in 1951 and very recently has been changed to "Flight Manual." The latter terminology will probably take time to catch on but I hope not seven years.

MONICKER

Portuguese 'Thang'

Sir:

On page 3 of APPROACH July 1958 there is a photograph showing a

mobile tower, which is called *"Real Thang"*.

I am sending to you herewith another photograph of another mobile tower which was manufactured by specialized soldiers with salvaged items in the shops of the Base of my command.

COL. P. A. F. G. DIAS COSTA
Area Base 3 Tancos, Portugal

VFR or IFR?

Sir:

In the August "Quiz Whiz" you say flights may operate between cloud levels if VFR conditions exist between the layers. I disagree. . .

LCDR
VF Squadron

● See letter below.

Sir:

Section 2.0404 of the ANC procedures for the Control of Air Traffic states: "'VFR conditions on above a cloud, haze, smoke, or top' may be assigned for flight other formation if the flight visibility is at least three miles, provided the ceiling is generally unlimited above the formation."

R. L. BRADDOCK
NAAS Kingsville, Texas

● Unfortunately, the original question in the Whiz Quiz did not state what type of flight plan was meant. If on an Instrument Flight Plan the ANC procedures quoted above are in effect and flying "between layers" is not permissible when cleared to "VFR conditions on top."

However, when operating on a VFR flight plan and flying "VFR conditions on top" there is no specific mention of any requirement for a generally unlimited ceiling above the aircraft. CAA says only, "aircraft may be operated in accordance with the visual flight rules above a well defined cloud or other formation provided climb to and descent from such 'on top' flight can also be made in accordance with the VFR weather minimums." Along airways (control areas) the minimums are 500 feet vertically under and 1000 vertically over.

Mechanical Defect

Sir:

An incident in our squadron could have ended as an accident similar to June APPROACH'S report on an AD-6 nose up. It was traced to a mechanical defect.

Two different "short" pilots with the same aircraft reported the aircraft to continue a swerve after full application of opposite rudder and brake was applied.

Inspection of the aircraft revealed the following:

1. The routing of the hydraulic lines to the brake pedals was as illustrated for the AD-4 and not the AD-6.
2. With full application of rudder the opposite brake would actuate, the amount varied with the rudder bar position. With the pedals adjusted to full aft position, the greatest application of the brakes occurred and as the rudder pedals were run forward, the pressure decreased on the brakes until at full forward, there was no pressure.
3. Upon jamming the rudder forward, as in applying the brakes in conjunction with full rudder, the opposite brake pressure would increase enough to lock the wheel at slow speeds.

This discrepancy was remedied by installing longer hydraulic lines to the rudder pedals.

LTJG B. T. BEARD
VA 115

Error in "Lost & Found"

Sir:

With reference to the graph on gliding distances in the "Lost & Found" article, July issue, page 12, someone should have caught the error in the statement that extremes in weight will change the gliding distance. At higher weights the IAS would have to be increased but the glide distance will remain the same.

W. C. DAHLGREN
LCDR. USCG
CGAS, Brooklyn, N. Y.

● Agreed the error should have been caught. The graph and statement were added to Captain Evan's fine article, so the blame belongs to APPROACH.

As an example assume two aircraft (same model) in formation with one heavier than the other. If both have to glide down, the heavier one, having to glide faster, will not be able to stay in formation with the lighter one but will pull ahead and arrive on the ground first. Both will, however, travel the same distance!

It is noted that slight differences in glide speeds are not critical for most models. For several different models an increase or decrease of 10 knots from the recommended speed reduces the glide range by only 2 percent.

Generally speaking, pilots having to glide into known strong headwinds can partially offset the resulting decrease in glide distance by increasing their glide speed 5 knots for each 15 knots of headwind.

Some flight manuals show both gear up and gear down glide ranges. On prop aircraft putting the props into Full Decrease will aid in achieving glide range; then once the landing area is made, the prop control can be put full forward providing one more means of increasing drag if needed.

Babble Control

Sir:

"Tower of Babble," May 1958 APPROACH points out very nicely the consequences of using nonstandard phraseologies in pilot/controller communications . . . we plan to distribute copies to each center, tower, station, combined facility and our Washington and Regional staffs. . . .

ROBERT I. GALE
Chief Procurement Division
Civil Aeronautics Administration
Washington 25, D. C.

SPECIAL/ ComNavAirPac designates month of October as "PERFECT LANDING MONTH."


announcing
the
CNO
safety
award
winners

THE END of one fiscal year is the beginning of another and the accomplishments of the old year must not be allowed to overshadow the tasks to be done in the new. This is particularly true as it applies to the Navy's aviation safety effort for fiscal year 1959.

Fiscal 58's accident rate, while the lowest in the history of Naval Aviation, was achieved in the main by the very low rates in the Training Command and the Reserve Training Command. In the operational forces, with the exception of Air Fleet Marine Force Atlantic, there was little improvement over the record of the previous year.

In examining the accidents in the operational commands, it is necessary to discuss that relatively small group of new carrier aircraft that contributed a disproportionately large number of accidents —the F8U, F11F, A3D, A4D, F4D, and F3H.

During the past year the average number of these aircraft operating was small compared to our total inventory. They flew 5% of the total flight time but accounted for 20% of the major accidents and the dollar loss represented by these accidents equaled 49% of the Navy's overall total. This disproportionate loss of first line combat aircraft, the backbone of the Navy's striking forces, is a matter of grave concern.

For fiscal 59 the average operating strength in these aircraft will increase considerably. Coincident with this increase will be a decrease in the older, slower, and safer models. This will mean that during the year hundreds of new pilots and maintenance personnel will be introduced to these new aircraft for the first time.

To meet this challenge, it is imperative that each command continue an aggressive and effective accident prevention program sustained by supervisory personnel at all levels of command, and supported by an adequate and thorough training program for all aviation personnel.

Only through these measures will the basic responsibility of command—the maintenance of operational readiness—be fulfilled and a reduction in losses of lives and aircraft be accomplished.

. . . . for outstanding safety records and commendable efforts in preventing aircraft accidents. . . .

FIGHTER

(MULTIPLE AWARDS, WITHOUT FIRST PLACE DISTINCTION)

WINNERS

NavAirLant

VF 71
F2H

VMF (AW) 114
F4D

NavAirPac

VF 193
F3H

VMF (AW) 542
F3D

NAResTraCom

VMF 141 (Oakland)
F2H

VF 725 (Glenview)
F9F

VA 741 (Jacksonville)
F9F

HONORABLE MENTION

VF 13

VMF(AW)531

VF 191

VMF 236 (Denver)

VF 712 (Denver)

VF 886 (Olathe)

ATTACK

(PROP AIRCRAFT)

WINNERS

NavAirLant

VA 85
AD

NavAirPac

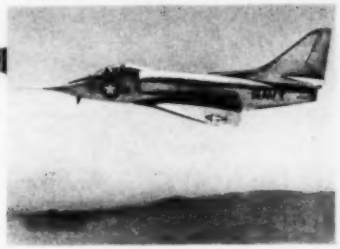
VA 196
AD

NAResTraCom

VMA 216 (Seattle)
AD

HONORABLE MENTION

VA 42 VA 155 VA 662 (Anacostia)



ATTACK

(JET AIRCRAFT)

WINNERS

NavAirLant
VA 34
A4D

NavAirPac
VMA 311
F9F

HONORABLE MENTION

VMA 211 VA 113

VQ/VAH

WINNERS

NavAirLant
VAH 5
A3D

NavAirPac
VAH 8
A3D

HONORABLE MENTION

VAH 7 VAH 6

Continued next page

Continued from preceding page

VP/VAHM

WINNERS

NavAirLant
VP 16

NavAirPac
VAHM 10
P2V

NAResTraCom
VP 713 (Denver)
P2V

HONORABLE MENTION

VP 5

VP 40

VP 742 (JACKSONVILLE)

VP 45

VS

WINNERS

ALL-NAVY
VS 23 (NavAirPac)
S2F

NAResTraCom
VS 661 (ANACOSTIA)
S2F

HONORABLE MENTION

NavAirLant
VS 31

VS 32

NavAirPac
VS 37

NAResTraCom
VS 821 (New Orleans)

VR/VMR/VW

WINNERS

NavAirLant
VR 24
R5D/TF

NavAirPac
VR 21
R6D/TF/R4Y

NAResTraCom
VR 692 (Columbus)
R5D

HONORABLE MENTION

VR 1

VMR 352

VR 861 (NORFOLK)

HELICOPTER

WINNERS

NavAirLant
HS 7
HSS

NavAirPac
HS 6
HSS

NAResTraCom
HS 891 (Seattle)
HUP

HONORABLE MENTION

HS 1

HMR(L) 362

HU 751 (Lakehurst)

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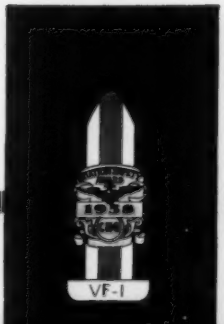

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FLEET TRAINING AND SUPPORT

WINNERS

NavAirLant
VX 1
P2V

NavAirPac
FASRON 8
SNB

HONORABLE MENTION

FASRON 102

FASRON 117

CVA

WINNERS

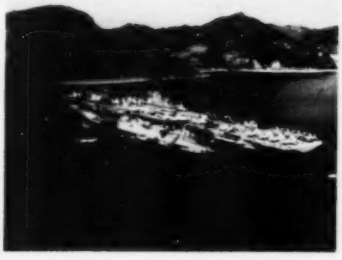
NavAirLant
USS FORRESTAL
CVA-59

NavAirPac
USS HORNET
CVA-12
(NOW REDESIGNATED CVS-12)

HONORABLE MENTION

USS RANDOLPH
CVA-15

USS BENNINGTON
CVA-20



CVS

WINNERS

NavAirLant
USS TARAWA
CVS-40

NavAirPac
USS PHILIPPINE SEA
CVS-47

HONORABLE MENTION

USS VALLEY FORGE
CVS-45

USS PRINCETON
CVS-37

LTA

IN ACCORDANCE WITH PARA. 6C OF OpNavInst 3590.5B, NO AWARD WILL BE PRESENTED IN THIS CATEGORY.

ATU

(JET AIRCRAFT)

WINNER

ATU 206
F9F

HONORABLE MENTION

ATU 202

Continued next page

ATU

(MULTI-ENGINE PROP AIRCRAFT)

WINNER

ATU 402
S2F

HONORABLE MENTION

ATU 501

ATU
(single-engine prop aircraft)
IN ACCORDANCE WITH PARA. 6C OF OPNAVINST. 3590.5B, NO AWARD WILL BE PRESENTED IN THIS CATEGORY.

BTG

WINNER

BTG 3S
T-28

HONORABLE MENTION

BTG1

TECH TRAINING

WINNER

CIC SCHOOL
F2H

HONORABLE MENTION

NavAirTechTraUnit, PENSACOLA

ADDITIONAL AWARDS:

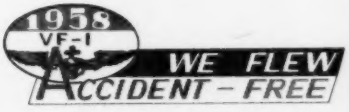
BASED UPON THE RECOMMENDATIONS OF THE MAJOR COMMANDS, IN ACCORDANCE WITH PARA. 6f OF OpNavInstr 3590.5B.

NavAirLant	NavAirPac	NATraCom
HMR(L) 261	**VAW 11**	**JTTU**
HUS	AD	F9F

ACCIDENT FREE

A gratifyingly large number of fleet and reserve squadrons flew the entire FY 1958 without a major accident! We regret the number was so great that security restrictions prevent the individual listing of this large a percentage of the aeronautical organizations in an unclassified publication.

To the two hundred eighty-six units, WELL DONE! Your units will receive a suitable number of the 4 color insignia shown here for wearing on hardahts, or other flight clothing.



SPECIAL RECOGNITION

Special recognition is merited by AirFMFLant for their fiscal '58 accomplishment of reducing their aircraft accident rate 25%. This outstanding record is especially meaningful when it is realized that the command participated fully in the fleet introduction of several of the newest high performance aircraft. Besides a lower rate, there were also fewer strike accidents, fewer major accidents, fewer fatalities, fewer injuries, and lower dollar total cost despite more expensive aircraft being involved.

The command, speaking for all of its units, credited the success of their aviation safety program to four main points.

1. Listed as perhaps the most important factor was a stabilized work force—skilled men were kept on appropriate jobs when rotation might have adversely effected fleet readiness and aviation safety. In noting that pilot factor accidents were further reduced to less than 40% of the total, both increased personal professionalism and greater student jet flight time in the training command were mentioned.

2. Both pilot and maintenance trainee checkouts were closely supervised, with continuous follow-up training and supervision in the "fam" or "on-the-job" phases. All facilities, including OFT and NAMO trainers were utilized. Better availability of NAMO trainers was also cited.

3. A good team spirit was developed, with all hands working towards the common goal of readiness and efficiency, which just naturally achieved the by-product of good safety.

4. Last but not least was the determined discipline to conduct all operations and maintenance in rigid adherence to Standard Operating Procedures.

For more tips from leaders in the 1958 contest, please turn the page.

The excerpts which follow are the "secrets of success" as expressed in the narrative reports received from the Winning and Honorable Mention squadrons.

In every case, these excelling squadrons enthusiastically recognized as requirements for safety *and* operational readiness:

1) command attention and direction in the safety program,
2) supervision provided at all levels,
3) outstanding maintenance, and
4) total efforts of every officer and man as a team.

Safety—for operational efficiency and not simply for safety's sake—requires that every job and task be performed in the prescribed manner. When a nut is torqued, the maintenance man must know the proper torque value and set only that value. When a pilot is scheduled for an operational flight, the Schedules Officer must know that this pilot has attained a state of training to successfully accomplish the flight. When a pilot mans his plane, he must adhere to the promulgated standards of operating procedures for that plane. If every member of the squadron performs every job assigned him in a thorough manner, safety is natural achievement.

Ideas and practical suggestions of experience were passed on to all pilots by the more experienced officers in the squadron. Safety became a "one for all and all for one" venture. A "Pass Down The Line" Log, in which hazards to safe flight operations are entered, is kept current by all hands. Before each flight, pilots and crewmen are briefed on their flight missions plus all pertinent safety items taken from the P.D.L. notebook.—VS 23

Safety-wise, probably the most outstanding aspect of pilot training was the slow, careful approach to a new aircraft. Each pilot attended a two weeks NAMO maintenance trainer on the A4D prior to his first flight. A good familiarization syllabus was developed and flights were conducted under close supervision during this stage and during initial training in potentially dangerous missions such as low level navigation, loft bombing, and cross-country flying. Throughout the year, the Safety Officer, firmly supported by the Commanding Officer, emphasized businesslike conservatism so that the aircraft was not unnecessarily pushed to its limits, and discretion was valued more than bravado.—VA 34

P.D.L."—
A "Pass Down the Line" log, in which hazards to safe flight operations are entered,

The familiar term "ground checks O.K." was restricted to ground handling equipment, and is not permitted on the yellow sheet unless proceded by the corrective action taken.—FASRON 8

The Maintenance Officer participates in all safety meetings and AI'M's and diligently searches through direct copies of AARs and FLIGAs received from other squadrons to find ways of preventing maintenance error and material failure accidents.— VF 191

A senior officer was assigned the duty of Safety Officer and safety has been given command attention.—VP 16

The emphasis is on accident prevention. Aviation safety is alloted a large part of the pilot's time. Every medium of contact with pilots and personnel is employed. At times, a tape recorder with sixty second safety hints and emergency procedure "commercials" is piped into the readyroom. No effort is spared in keeping all hands aware of aviation safety.—ATU 202

Although this command operates eight different model aircraft, each pilot is limited to two models in which he is qualified to fly.—VX 1

All hands were kept constantly aware of hazards involved and no one had the chance to be lulled into the feeling of "It can't happen here."—VR 861

Changing to diagonal aircraft parking has promoted safer handling of equipment during refueling operations. In addition, the diagonal parking affords more clearance between aircraft—this in itself has greatly reduced taxi accidents.—BTG 3S

Safety is not just the responsibility of the Commanding Officer and the Safety Officer. Each of the unit's officers and enlisted men is kept aware of his individual importance in the accident prevention program and thereby assumes his portion of this great responsibility.—JTTU

Close supervision in all training and operational programs was accomplished by designating safety representatives in each squadron division.—VS 32

The maintenance slogan was "Never Sacrifice Safety for Availability."—HS 6

Trained trouble-shooters with a keen appraisal of the aircraft have, on several occasions, stopped pilots from taxiing out for flight when discrepancies have developed after starting.—VF 191

A "Kangaroo Court" set up for minor infractions, a "Plumbers Tool" given with appropriate ceremony for safety violations and incidents, a "Well Done" and "Dilbert" section of the safety board, and a "Practice Flameout Approach Scoreboard" have all contributed greatly towards active participation and friendly competition among the squadron pilots.—VF 191

Continual and consistent emphasis was placed on the necessity of proper pre-flight procedures; the requirement of thorough knowledge of the aircraft systems and limitations; the execution of a proper approach and landing or its alternative—a timely wave-off.—BTG-3S

All pilots and crewmen meetings were conducted prior to the first launch each working day. This has been accomplished without the sacrifice of operational efficiency.—HMR(L) 362

Observation of the pilot's ground and air techniques by senior squadron pilots leads to a knowledge of individual foibles, and subsequent corrective advice is either given individually or incorporated in lectures.—VMF 141

Emergency procedures were reviewed formally each day with pilots selected at random leading discussions regarding in-flight discrepancies or emergencies.—VA 113

The safety program was a continuing, supervised, all-hands effort based on the proven fact that a properly planned operation, executed effectively, is inherently safe.—VS 31

The squadron invited various civilian and military experts to be guest speakers, such as the head of the local CAA area office.—VAW 11

Short oral safety quizzes were given every morning and a written safety quiz every Wednesday. The squadron was divided into 3 flights for the weekly quiz. At the end of the month, the flight that had the highest average was treated to a free happy hour at the O'Club as guests of the lowest flight. This quiz program, entitled "The $715,000 Question, or You Bet Your Life," instilled excellent spirit in the squadron and covered such subjects as servicing the A4D, emergency procedures and general maintenance. Through this program, the factor of "know your aircraft" was emphasized, and this factor is believed to be the most important single item in establishing the safety record. — VMA 211

Flight operations were scheduled in such a manner as to maintain a balanced load on the Maintenance Department and on the flight crews. — VAH 7

Much advance preventative maintenance was performed. For example, during an intense training period involving more than normal G-stresses, each aircraft was inspected following flight for any signs of warping, popped rivets, or loose access doors. Similar checks were made of tail hooks and landing gear during carquals. In other words, heads-up procedures were instituted depending upon the employment of the squadron. The squadron was several times in the position of already having completed checks or inspections, as routine maintenance, when safety-of-flight messages were received from higher authority.—VA 34

Pilots were encouraged to "volunteer full confessions" at safety meetings when experiencing "Anymouse" type situations.—VS 32

Our Safety Officer's system of disseminating information was not that of paper exchange ("Read and Initial Boards") so much as that of having "bull-sessions" where detailed information was passed from experienced to unexperienced enabling everyone to get into the act.—VF 13

We post a "question-of-the-week" with a simulated set of circumstances which requires a written answer.—VA 85

There is no room for the individualists—everyone being part of the team.—VMF(AW) 542

The pilots received instruction by means of the N.A.M.O. Trainer, and OFT training syllabus and numerous lectures, briefing, examinations and continuous personal attention by more experienced pilots. Representatives from the squadron were indoctrinated by several other F4D-1 squadrons in operating procedures in order to gain additional information to incorporate into the training program. Information was continually being disseminated at all pilot meetings held daily, and through weekly training programs.—VMF(AW) 114

Emphasis was on aircraft ground school, thorough briefings and de-briefings, and repetitive lectures on every facet of oprations. Absolutely nothing was taken for granted with respect to the pilot's and crew's overall technical knowledge.—VAH 7

Cooperation and exchange of information between departments and other organizations flying the F4D-1 aircraft by means of a newsletter has helped in avoiding common pitfalls. — VMF(AW) 114

Thorough post-flight inspections revealed discrepancies not evident in flight, but which could have developed into serious conditions on future flights.—VP 40

Thorough training of the Runway Safety Officers in their duties, and the debriefing of pilots by these officers, contributed materially to the accident-free operations of this squadron.—VF 886

The maintenance personnel are unhurried and confront their tasks with a professional attitude. Meeting the basic requirements is not enough; each maintenance division seeks thoroughness and takes pride in its accomplishment.—VS 37

An aircraft was assigned to a crew and each crew flew their own plane if at all possible. —VAHM 10

Aboard ship, movies of all landings were studied to determine sink rate and pilot landing technique.—VA 113

Rigid pre-flight inspection of aircraft by the plane captain and pilot, and complete reporting of discrepancies figured greatly in the squadron's successful safety program.—HU 751

The great reduction in ground accidents within this command is attributed to changes in tie down methods for both equipment and aircraft.—VP 45

In spite of the problems, pride and satisfaction are the keynotes of achievement and results. Each member of the squadron has the feeling that his personal effort is important to the overall success of the squadron and contributes accordingly. —VR 24

When the squadron experienced a 40% turnover of pilots, a new indoctrination program was introduced, featuring a coordinated flight and ground training syllabus designed to qualify every pilot as pilot-in-command, regardless of rank. This program was flexible enough to meet individual needs and broad enough to achieve maximum training in a safe, orderly fashion. The morale of the junior officers was immediately improved when they could look forward to equal first pilot opportunity with the more experienced pilots; their unanimous response contributed greatly to the squadron's overall safety performance.—VS 31

The unit operates on the motto "If the job isn't done safely, it isn't done right." The safety record is the pride of all hands.—ATU 202

In this squadron, safety has become a habit—a good habit.—HS 7

We believe that safety begins in the home and that morale is a large factor. With proper physical condition and mental attitude, the problem then becomes one of training and supervision.—VAH 7

The Safety Officer's program was primarily based on assuring that the pilot was qualified for the flight or he didn't get the plane until he was examined and flight checked. The Maintenance Officer made sure the plane the pilot got was ready in all respects for flight.—FASRON 8

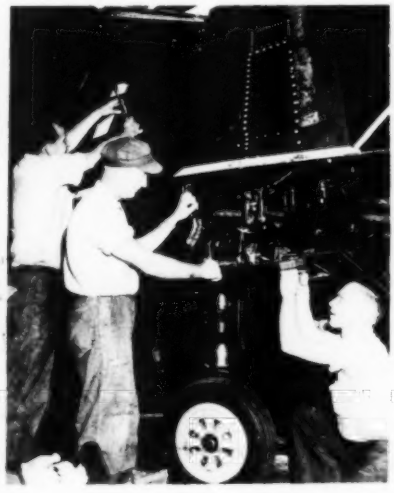
The individual is the greatest single factor in any safety program; accordingly, each man must be cognizant of his contributed part.—VMF 141

If everything is done correctly, from safety wiring to fuel management, the result is a basically safe flight operation with the maximum chance of achieving the real goal: operational success. —VAH 7

Flight crews do much of the work required on aircraft checks and maintenance. These men fly the plane, and therefore, are more apt to make sure each detail is properly taken care of.—VP 16

Constant safety reminders (in the form of safety slogans) were published daily on the flight schedule.—VA 42

The main factor was interested people with a sound approach and a professional attitude towards the problems of naval aviation: officers who in addition to normal ground duties, spent long hours studying and flight planning in order to gain and maintain a high level of proficiency.—VAH 6



The line is divided so that personnel work on only one of the squadron's two aircraft types. This eliminates confusion and the possibility of installation error from working on two different type aircraft simultaneously.—VMF(AW) 531

Particular emphasis was given to the construction and use of the overrun barriers and the runway arresting wires. In brief, the mission of the safety division has been to prevent accidents rather than study wreckage.—ATU 206

Each work-day morning, a meeting is held which all pilots and non-pilot officers are required to attend. Safety is always a main topic of discussion at these meetings, with at least one question on the P2V-5F. —VP 16

The Commanding Officer and Executive Officer actively participate in safety meetings and spot check the pilots on various procedures at all APM's.—VF 191

While shore based, all pilots are required to be in the readyroom in flight clothing one hour before launch. Aboard ship, this period is extended to one hour before "man planes." During pre-flight briefings, fundamentals (especially in the case of new pilots) are taught through the process of repetition.—VA 85

The Maintenance Department has maintained an aggressive on-the-job training program.—VAH 5

Periodic inspections by competent personnel are made of all flight gear. Any changes in flight equipment are incorporated immediately. — VMF (AW) 531

The maintenance personnel received thorough instruction through a course at the N.A.M.O. Trainer and through on-the-job training with three different organizations already experienced in operating the F4D-1. The squadron has held periodic maintenance meetings, lectures and continuous on-the-job instruction and supervision. All this training has been directed toward improving each individual's knowledge of his aircraft and the proper techniques to be employed. — VMF(AW) 114

Flights are designed to be demanding on the pilot. For example, we encourage weekend cross-country flights but require these flights be conducted on IFR flight plans, and be debriefed upon return.—VA 85

A "Normal and Emergency .Procedure Flip-Chart" has been devised by the Safety Officer, and was procured voluntarily by the pilots at their own expense. This "Flip-Chart" has been used several times in the air during deferred emergencies, and is continually reviewed at briefings as required by the Training Syllabus Mission Cards. —VF 191

It has been repeatedly stressed that the lack of knowledge, negligence or carelessness of any one individual, either in flying, maintaining or servicing the aircraft can not be tolerated. All officers and CPOs must think and function as squadron safety officers, looking for areas of danger and methods for improvement.—VP 5

A professional does his job with maximum effectiveness and with the least hazard, and we are an organization of professionals.—VAW 11

A UHF transceiver was installed in the operations office to allow a pilot direct contact with the squadron for assistance in case of any emergency. —VMF(AW) 531

Every morning at an APM, safety discussions of half an hour are held. In addition, direct questions on emergency procedures are asked by the Safety Officer of any pilot in the room. This serves not only to test one pilot's memory, but through repetition, drills each procedure into all the pilots' minds and makes them safety conscious.—VMF(AW) 531

Pictures of local airfields and pertinent NOTAMs displayed side-by-side have been employed to insure that all pilots are well informed of possible flight hazards prior to takeoff. — FASRON 117

The squadron transitioned to the F3H-2 and flight time was scarce for several months. Our time was put to extremely good use in thoroughly indoctrinating all pilots, both first and second tour, in our new bird. *Demon*—experienced personnel were aggressively sought from wherever they could be found, including engine and airframe tech reps, company test pilots, TTU pilots, etc. The crew as well as the pilots participated in these "voice of experience" sessions, and hence mis-impressions were avoided and bad habits through ignorance did not have a chance to form. Hand in hand with this program, operational and tactical procedures were drilled and redrilled.—VF 193

Discrepancies are written up in a conscientious manner by the pilots and action by maintenance personnel is prompt and thorough.—VP 40

Good military discipline and constant alertness around aircraft has resulted in a minimum of ground accidents.—VMF 141

Maintenance checks are detailed and thorough, and responsibility for maintenance is placed on as low a level as possible without decreasing the normal supervisory responsibility.—VA 85

Standardization of flight procedures and the absolute use of check-off lists contributed greatly to our safety efforts.—VAHM 10

A high degree of efficiency, high morale, mutual respect among the officers and the men has resulted in the highest reenlistment rate in the fleet. The retention of trained men greatly contributed to the efficiency and the safety record of the squadron. —VR 24

Navigation practice was conducted in a room set up especially for this work.—VR 692

This squadron has operated under the concept that any well motivated Naval Aviator can fulfill the operational requirements of his command, provided he is properly supervised, has a thorough knowledge of his equipment, and utilizes the flight training periods alloted to the maximum degree of effectiveness. The airplane commander has been made the focal point of training and safety.—VAH7

A periodic check of the maintenance spaces is conducted by the Safety Officer and discrepancies are immediately reported to the Maintenance Officer. Prompt corrective action is taken. The flight line is continually being checked to insure that plane captains and line trouble shooting personnel are not slipping into unsafe or non-standard practices. Twice daily, the entire aircraft parking area is closely inspected for foreign objects.—VF 193

"Fam stage" cockpit checkouts and emergency procedure review are required after long layoffs due to weather, aircraft groundings, or leave periods. — VF 191

All pilots were thoroughly briefed before going into any new phases of flying. All flights are briefed according to a standard briefing guide available in the ready room at all times.—VA 196

Carelessness in any form meets prompt corrective action. Recognition for outstanding efforts is given when appropriate, and compliments are regularly made at musters for the unit's adherence to the rules of safety.—VMF 141

Ejection "dry runs" were completed by all pilots quarterly. Oxygen mask cleanliness and repair was constantly emphasized. "Bull sessions" were encouraged so pilots could exchange ideas and information. —VF 712

This squadron does not attribute its safety record to any particular person, but rather to all of its officers and men.—FASRON 117

Any squadron pilot before he flies his first hop in squadron's aircraft must complete the following:

(a) Successfully finish the Naval Air Mobile Trainer course on the aircraft,

(b) Receive a passing grade on one open book and one closed book examination,

(c) Eight flights in the Operational Flight Trainer,

(d) Be current in low pressure chamber, Dilbert Dunker, night vision, and instrument rating,

(e) pass a blindfold cockpit check,

(f) demonstrate pre-familiarization stage taxi and procedures techniques.—VMF(AW) 531

The operational flight trainer syllabus was completed by all pilots and flight crews during the familiarization phase of training. Quarterly requalification in emergencies in the trainer is compulsory.—VAH 5

A squadron Safety Council, consisting of a senior petty officer representative from each shop and presided over by the Safety Officer, meets monthly to discuss safety problems and their elimination. The results of these meetings are forwarded to the Commanding Officer, Maintenance Officer, and other concerned personnel.—VF 193

"... I ... cannot emphasize too strongly, we are most receptive to any ideas which may aid our Safety Program, from any and all quarters."

Rear Admiral Allen Smith, Jr.

The potential hazard was in the form of a direct crosswind but the pilot failed to compensate for it.

truth and consequences

ILL WIND—The pilot had 600 total hours of which 100 hours was in FJ-3s. He had been tow pilot on two previous gunnery missions and was considered qualified to be scheduled as tow pilot for this particular afternoon gunnery hop.

Runways 9-27 (8000 feet) and 12-30 (6000 feet) were considered the only runways available for jet operations. The 8000-foot runway was used for normal jet operations with tow takeoffs scheduled for the shorter 12-30. This was to prevent traffic interference and to avoid the arresting cables on 9-27.

During the morning aerology had issued an advisory to expect northwest to north winds at 20 to 28 knots and this had been disseminated by the SDO. Shortly before 1400 the pilot taxied to the end of runway 12 to pick up the tow line. At this time the tower was giving the wind from the north at 16 knots. As soon as the tow hookup was complete the pilot called for takeoff clearance. Clearance was given with the wind announced as north northeast at 20 knots.

It was felt that the resultant maximum downwind component of 10 knots would not have prevented a successful takeoff with a tow. The potential hazard was in the form of the direct crosswind from the left. Takeoff was commenced with the pilot immediately conscious of a strong crosswind. "It was necessary to use brake, rudder and aileron to maintain directional control," he said. "I raised the nose gear off at approximately 100 knots and waited for the aircraft to become airborne."

From ground observation the first part of the takeoff was normal with the nose of the aircraft rising to a normal takeoff attitude. Then the right wing dropped, dragging the runway for a short distance, and things turned to worms shortly thereafter.

The wings leveled, the nose dropped, and the takeoff roll continued for another 500 feet at which time the aircraft became airborne in a right swerve.

After flying for about 200 feet at about 4 feet of altitude, the right wing dropped again. "Once airborne," said the pilot, "my right wing wanted to drop and it took a great deal of attention and both hands on the stick to maintain a wing level attitude . . . the next thing I knew I made contact with the ground."

The FJ-3 cartwheeled on a semi-horizontal plane, burst into flames and came to rest well off the runway about 600 feet from the end of the runway. The pilot abandoned the aircraft unassisted.

Investigation disclosed no ground for mechanical or material failure as either the primary or secondary cause of the accident. The board concluded that the pilot failed to compensate for an adverse crosswind.

In this connection the comments of the squadron C.O. are of interest. The fact that this accident stemmed from a tow mission, he said, has little significance other than as such, a crosswind runway was preselected for the pilot. Once he elected to takeoff with an approximate 90-degree crosswind, it became only a matter of pilot technique. The pilot attempted a normal takeoff, thus starting an aerodynamic chain reaction that, in a very few seconds developed into a serious accident.

As the board mentioned, even though the aircraft became airborne, the reduced efficiency of the starboard wing caused by the resultant unfavorable relative wind, slow airspeed, and use of ailerons to correct for the low wing, made prolonged flight improbable. . .

This accident, noted one endorser in the chain of command, highlights among other things, the necessity for close liaison between squadron operations, flight leaders, aerology and the tower . . . While it is true that responsibility for taking off or aborting a mission lies primarily with the pilot in command of an aircraft, it is only human for most pilots to accept whatever runway the tower assigns them. To refuse the assigned runway in this case where only one is used for tow takeoffs, would have amounted to cancelling the entire flight's mission. Perhaps supervisory personnel might better have made this decision.

DIVE FOR DECK—The initial portions of a mirror approach by an F8U were considered normal by the LSO but just prior to reaching the ramp, the pilot observed the meatball going high and initiated a nosedown correction. The aircraft contacted the deck in a three-point attitude, engaging number 3 wire. Immediately thereafter both main gears were observed to collapse.

In attempting to arrive at a cause factor, the board considered either material failure or pilot factor as primary.

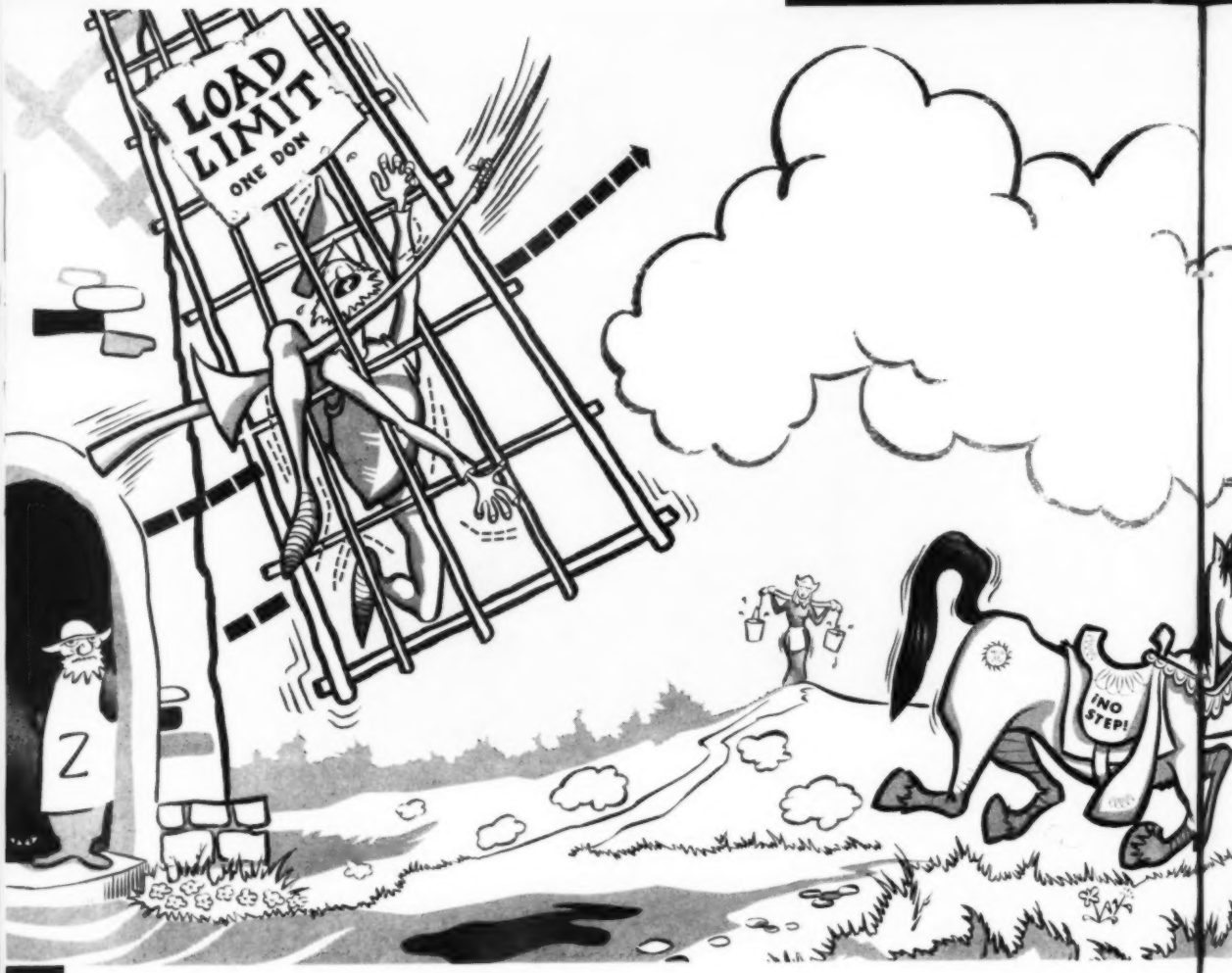
The F8U-1 landing gear is designed for an ultimate failing load resulting from a 20.5 foot-per-second rate of descent. As this load figure is attained, the gear again is designed to fail at the Gland Nut prior to any other breakage.

The Board was of the opinion that the main landing gear failure occurred in a manner identical to that for which it was designed. The additional damage sustained by the landing gear was due to forces imposed after failure of the gland nut.

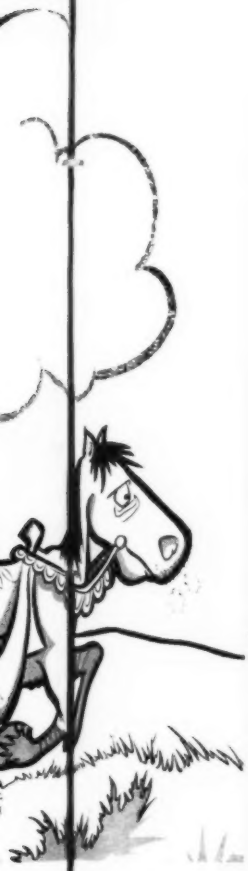
In determining the pilot factor involved the board was concerned primarily with the possibility of the pilot inducing a situation which resulted in a sink rate above the design limits of the aircraft. Sink speed, during carrier operation, depends on true airspeed, velocity of the wind over the deck and the glide path angle set on the mirror. For the F8U-1 the mirror was set to a basic 4-degree slope. This slope combined with an approach speed of 138 knots and a wind over the deck of 35 knots would result in a sink rate of approximately 12 feet-per-second if the meatball were held in the center until contact with the deck.

With closure rate remaining constant (approximately 100-105 knots) but riding a steady high meatball to the deck, the glide slope is increased to as much as 4.75 degrees, with a resultant increase of sink rate to approximately 14-15 FPS. If an attempt is made to correct the high meatball back to the middle at the instant before touchdown, a sink speed of from 2 to 5 feet per second higher than that calculated for a steady high meatball would be developed. Continued on page 26

The pilot saw the meatball going high and eased the nose over . . .



SEE, SEE, SENOR



DON QUIXOTE tilted with windmills from a comfortable saddle on the back of Rosinante (cost: 200 pesos), but in our modern era of sputniks, subliminal advertising and stereophonic sound, the windmill has been tamed and Don has put Rosinante to pasture while he rides the windmill itself (cost: $437,000).

It didn't take Don very long after graduation from WTS (Windmill Taming School) to learn that his new steed had an allergy—it was deathly a'feared of *wire*. Not the kind of fence wire that bothered Rosinante, but the bigger, longer, just-as-invisible wire that lurks suspended between mountain ridges, under bridges and poopy bags, and around tall TV towers.

Look up, Don, look up and if you have 20/20 vision, are adequately rested, have a clear visor and cockpit windows; know where to look, and LOOK ————

You will see the kind of wires that mean danger to low-flying helicopters, wires that may hang as much as 500 feet above the ground, may be one-half inch in diameter, and resemble the cheese-cutter wires that the British hung from balloons to carve ME-109 wings. Except, of course, you won't see any balloons to give you a clue.

Naturally, when you plan a flight, you plan it so that you will remain well above rocks, buildings, and TV towers, using for the most part 500 feet as a base altitude. A profile of your intended flight path will probably show very little variation in altitude. On the other hand, some helicopter missions often present flight path profiles that look like an electrocardiograph of a Mexican jumping bean with each abrupt variation from straight and level flight representing a maneuver to avoid a hazard at close quarters.

Think of what happens when you run through your neighbor's backyard; with enough visibility you can run safely, but when visibility is poor, all kinds of hazards hide, even in familiar territory. Rake handles fly up to stun you, clothes lines slice you across the Adam's apple, and a lawn mower administers the coup de grass.

Visibility is the factor in avoiding wires during low flight, also. How clear is the air, how much light is available, how much contrast is there between wires and background, how well can you see? These are questions that don't need to concern the pilot who likes to pin the tail on the donkey by hitting wires while cutting his fingernails or re-folding a chart.

Your protection against this hazard starts with up-to-date familiarity with your command's limitations on low flight. Whether you call it "descent below authorized minimum altitude" or flat-hatting, this kind of horsing around with wires may send you to the glue factory. Even admitting that you're performing low-altitude flight in accordance with the book, after a complete pre-flight briefing on expected hazards, the flight requires at least as much outside-the-cockpit attention as parade formation.

A typical collision with wires occurred when an HRS pilot on a rescue mission hit power lines hanging 200 feet above a valley with a span of 3400 feet. Another not so typical collision occurred when a pilot went charging into a foreign harbor at a very low altitude.

Naturally, one way to help you to see those hazards is to make them more visible. Until we can find a way to do this, you can solve the problem by respecting the additional dangers inherent in flight near the ground. ●

Continued from page 23

It was therefore the opinion of the Board that in the pilot's attempting to correct the high meatball by diving for the deck the sink rate was increased to a point exceeding the stress limitations of the landing gear. The fact that he did dive for the deck is substantiated by his engaging the number 3 wire (target wise) from his relatively high meatball position.

IMPERFECT SET-UP — "On that morning," said the surviving wingman, "I was scheduled to fly a hop with the LT. Takeoff time for our AD-6's was scheduled for 0715. I reported for briefing at 0610 with the LT and two other pilots who were scheduled for another phase of the exercise with the destroyers. The Air Intelligence officer briefed the hop and repeated all the highlights of the previous afternoon's brief as to position of the ships, frequencies, reports to be made, ADIZ penetration etc.

"Upon completion of the brief the LT briefed me that we would fly the hop at 35 feet to avoid radar pickup or visual detection. He briefed two hand signals that he would use to place me in a slightly tail position so we could weave as we came in. He warned me to stay a little wide and slightly stepped up in case of a sharp turn into me, so I could go over the top of him. We discussed this the afternoon before and we were both very anxious to go on the hop.

"At 0740 we took off and headed for our area. I indicated to him I was getting good suction on my externals by hand signal as we both had some difficulty on the deck. He smiled and gave me the thumbs-up and we headed out to sea letting down along the way.

"We flew out to our target at about 20 to 30 feet. We completed the mission and the ship sent us to the beach for a second run. On the way back we slowed down a bit to save the engines.

"At the assigned time we started on our second run to the ships. Again we let down to 20 feet. About 1015 my birdog picked up the target ship and I pulled up beside the LT and indicated the new heading. He followed this course for a short while and climbed to 100 feet or more for a short time and must have spotted the ship because he let down to 20 feet and maybe slightly less. His letdown put him slightly ahead of me and I noticed his prop was leaving a wake in the water. I was studying this and trying to figure out if he were lower than I or not. When the ships came into clear view and he nosed over slightly, I called 'Pull up! Pull up!'

"As he started to pull up I saw part of the prop (12 to 18 inches estimated) fly off as the plane pulled up in about a 40-degree nose-up attitude. It got up to about 200 feet then nosed over and struck in a 45-degree nose-down attitude, breaking up the aircraft at the wing root. I had a good view of the aircraft and did not see the LT attempt to get out."

"He must have seen the ships as he let down to 20 feet or less . . ."

It was brought out by the accident board that the pilot of the crashed AD had read and initialed two separate directives which set the squadron minimum overwater flight altitude at 50 feet. He had also been present during ground school when minimum flight altitudes were em-

phasized. During the week of the accident the pilot was present at an APM when the squadron safety officer directed all pilots attention to three cases of fatal accidents caused by low flying.

The flight was well briefed for successful completion with the exception that no minimum altitude for run-in was specifically stated by the briefing officer.

In deliberately briefing his wingman for a lower than squadron minimum altitude the pilot exceeded his authority and this was further aggravated by the fact that the wingman did not object to the briefing by his leader.

The accident was then all arranged, said the board. Only coordination of the details were needed for final culmination. The pilot's eagerness to make an undetected "attack" pressed him lower and lower. It is immaterial whether it was a second's inattention, an error in judgment over the comparatively smooth water, or an unconscious movement to stay low that thrust him beyond his ability to recover. The circumstances were right. The accident found a place to happen!

As to the pilot's leadership qualities and general airmanship, he was considered by his superiors in the squadron to be a leader among pilots. His commanding officer said, "He was an experienced aviator with an affirmative attitude toward flying safety. He was completely devoid of any frivolity in connection with flying. It is unfortunate that his unusual inattention to the squadron's minimum altitude doctrine had such a tragic result."

Heading into the setting sun, the helicopter pilot was unable to see the power lines across the gully.

SUNSET—A Search and Rescue Helicopter pilot was cleared on a local training flight and began reconnoitering the foot hills of a nearby mountain range with the intent of plotting accessible helicopter landing sites. Late in the afternoon the pilot turned westward and began the trip back to his base.

While flying down a wide gully, at 200 feet above the ground, the helicopter struck two power lines. After contact the pilot executed an autorotation landing in a small open field nearby.

The power lines, suspended by two poles 900 feet apart, were difficult to recognize under normal conditions and impossible to see when flying into the setting sun.

For this reason the board considered the primary factor in the accident to be the pilot's failure to allow for adequate clearance of obstructions when his forward visibility was seriously reduced by sun glare.

Please note "See, See, Senor," page 25, this issue.—Ed.

ANYMOUSE

COCKPIT TROUBLE

WE WERE on a TV hop at 27,000 feet. The dual pilot (rear cockpit) was flying and I was making the radio transmissions and acting as lookout. Shortly after level-off I noticed a faint nauseous disoriented feeling[1] that in my particular case is a symptom of hypoxia. I didn't think too much of it, tightened my mask, and tested the fit by grabbing the hose and trying to inhale. I felt a little better, so we proceeded with our business. Pretty soon, things outside the cockpit began looking hazier[2] than I thought they should, and I recognized this as an additional symptom (in my case) of hypoxia. I tightened the mask some more, checked the blinker, oxygen pressure, and decided to try 100 per cent. At 100 percent breathing was rather difficult.[3] By now, I didn't seem to be able to make rapid decisions about the oxygen problem,[4] although my mind felt clear and I was able to keep up a good scan for bogies and make comments to the dual pilot.

I decided my mask must be okay because I could breathe easily on NORMAL even though I had trouble inhaling on 100 percent.[5] I checked blinker, pressure and switched back and forth from NORMAL to 100 PERCENT several times,[6] hoping that things would improve. Shortly I switched to SAFETY PRESSURE and experienced difficulty inhaling.[7] I went back to normal and left it there because it was easier breath-

ing. I felt pretty sure the regulator was faulty but couldn't make up my mind for sure that the mask wasn't faulty.

We then decided to *climb to 31,000 feet.*[8] I thought it would be a good idea to climb up, because we hadn't spotted anything at our level for 20 minutes or so. As we reached 31,000, I suddenly felt decidedly worse,[9] and told the dual pilot to let down. He came back on the power and eased the nose over. I felt rapidly worse than ever and told the dual pilot to expedite the letdown. I actuated the speed brakes and pulled the power back some myself. We were starting into a left descending bank *and then* we were straight and level at a lower altitude and the dual pilot was calling me. I answered and we determined that I had lost consciousness for a short period.

We were headed for _____ by

then, so I told him to continue flying it. I felt like lowering my head and taking a short nap, the same feeling you get when you've dozed off, are suddenly awakened, and wish you could go back to sleep again. I felt like I might go back to sleep and it didn't seem to make much difference. I told the dual pilot to keep circling because I wasn't to be depended upon to watch out ahead. My mind seemed clear, although I had a slight headache, saw spots on the instruments when I tried to focus on them, and had the same general symptoms I felt earlier in the hop.

We went to 10,000 feet and then to 5,000 but I *didn't feel much better at 10.* I called the tower and requested practice simulated flameouts.[10] They told me to stand by, continue orbiting. I wanted to get on with the hop, but was disappointed that I wasn't getting back to normal more quickly. I felt fair, but my eyes couldn't focus on the instruments too well. Upon advice of the unit safety officer, I pulled the parachute oxygen bottle. After 10 or 15 more minutes of orbiting at 5000 feet, I came in on an uneventful landing.

Now let's "Monday morning quarterback" this incident:

1.—I noticed a faint nauseous disoriented feeling — *this can be a symptom of hypoxia and he did recognize it while making some attempt to correct it—so far so good.*

2.—things outside the cockpit began to look hazier—*another symptom which he again recognized and to some extent took corrective actions.*

3.—at 100 percent breathing was

Anymouse continued next page

AND HIS HAIRY TALES

Anonymous reports of flight experiences—By sharing your experience you may save another pilot's life—Send us your Anymouse report.

Continued from preceding page

rather difficult—*this should have been indicative of what action to take.*

4.—unable to make rapid decisions about the oxygen trouble—*by now this pilot was just about gone. Anytime there is difficulty in breathing on 100 percent, it can be the mask, regulator, the oxygen system is OFF or there just isn't any. If the mask or regulator is defective, the only course to follow is to get below 10,000 feet. If the oxygen is OFF and there is oxygen pressure—Well ? ? ?*

5.—I decided my mask was OK because I could breathe easily on NORMAL even though I had trouble inhaling on 100 per cent—*by now the pilot was beyond making correct deductions. If you can breathe easier on NORMAL than while on 100 per cent something is definitely wrong. You'll only be breathing cockpit air (particularly if the system is OFF). Another point, never assume that the mask is OK after having trouble because if the exhalation valve sticks open and allows ambient air to enter the mask during inhalation it can be as fatal as a defective regulator and you'll never know it!*

6.—I checked the blinker, pressure and switched from NORMAL to 100 PERCENT several times—*it's much too late by now — had the pilot really checked the blinker have noticed that the blinker wasn't working and would have pulled the bailout bottle and descended to below 10,000 PERCENT, he would low 10,000 feet. By the way, in case you've forgotten, in the TV-2 you will always read the amount of oxygen in the system regardless of the position of the ON-OFF switch—it's not like the Navy oxygen systems.*

7—10.—*Throughout this part of the flight, he was mighty lucky that he had a pilot in the rear cockpit!*

Yes, you guessed it—the oxygen system ON-OFF valve was in the OFF position.

In conclusion, never underestimate the effects of HYPOXIA. Do something that will positively clear any symptoms—YOU might become a statistic.

EXCUSE ME!

SOME time ago an airline pilot thought he was making an approach to his destination and landed unexpectedly at a small neighboring field in mud up to the hocks. The remarks concerning his ability . . . were most profuse. Boiled down they finally came to: "How could *any* pilot do that?" My answer is now, "It's easy!"

I entered the cockpit of the R6D north of Salisbury, Maryland, southbound for Navy Norfolk and assumed the position of copilot. It was the most beautiful night VFR

weather you ever saw. The plane commander was one of the old hands in the squadron and is considered, by me and others in the outfit to be thoroughly familiar with the Norfolk area.

As we tooled along, one birddog was pointing to Navy Norfolk. I had now been in the right seat long enough to be oriented and about 15 miles north of Fox intersection the PC elected to 'cancel out' and go in VFR since the flight from overseas had consumed almost all of the 28 hours of allotted crew duty time.

We made the most beautiful landing pattern ever made in an aircraft. Right down low so that we could see the big number SEVEN on the concrete. SEVEN?! Have you ever landed on runway Seven at Navy Norfolk? Quick! Max power!

Recasing the retreads and waving off brought a chuckling "Good morning" from Langley AFB Tower. Navy Norfolk told us how easy it could happen in the visibility we had. Our opinion is that it was just a nice way of offering us an excuse. We had visibility to the moon. We *goofed.*

Pilots have been repeatedly warned to be extra cautious during periods of fatigue after long and tiring flights. All pride has been cast aside in hopes of sparing a fellow man from a similar or worse situation.

JAM HANDY

MY FUEL stop on a cross-country from the West Coast to St. Louis was Amarillo which was reached without incident. After fueling I departed for St. Louis and got 33,000 feet from ATC.

On reaching St. Louis I started my jet penetration in the trusty F3D-2 and broke into the clear at 25,000 feet. At this point I cancelled IFR and proceeded into the break at Lambert Field. The break was normal but at the 180-degree spot I had trouble.

I was too high and forward stick was applied to lose altitude and lo and behold! No forward movement. Aft stick was no strain.

Elevator trim tab and power were used to get the aircraft on the runway and the rollout was uneventful. The next morning, bright and early, I broke out the HMI (recommended for all cross-country hops by me) and with the help of a contractor's rigger we determined the cause of no down elevator. Yep.

It was a screwdriver (pilot type you know, 3½ inches long and handy for aviators) lodged in the elevator controls. After removing it the elevators worked like a charm.

For related info please see "Isolated Case," August APPROACH. — *Headmouse*

SEE STATE

WE WERE in a P5M-1 cruising east at 9000 feet in VFR conditions on top and were about 10 miles west of Salt Flat, Texas. Visibility was 40 miles or more.

A B-25 was sighted dead ahead cruising west at approximately 9200 feet. I held my altitude and he passed directly over us. I called and asked if he had seen us. The answer was "negative" and that bothered me. It wasn't the fact that he was at the wrong altitude — it was the realization that the drivers must have been really blind, for you can't hardly miss seeing a boat of our size.

Since most B-25's are either training or VIP it is assumed that they would fly more professionally than most.

Airborne assumptions, on most any subject, can be dead wrong!— Headmouse

JET WASHED

DURING a section takeoff I encountered severe turbulence and jet wash shortly after getting airborne. My right wingtip very nearly hit the ground during recovery.

This happened, I believe, because of a last minute decision to make a section takeoff resulting in my having only about 75 percent power when the section leader started rolling. What really made things difficult was a slight right crosswind with the section leader on my right.

I lucked out and recovered by turning right; I had to, since I couldn't get the wing up! Next time I will follow the original decision to make individual takeoffs.

You gotta do what the man says, but it would seem that a good flight leader would plan a better hop, including putting you upwind to save you from both jet wash and foreign object damage from runway trash. —Headmouse

CHECKOUT

WHILE taking my instrument check in a Sweet Nelly Brown (SNB to you technical types) on a fine VFR day not too long ago we were traveling along a heavy traveled airway.

A glance at my check-pilot revealed he was busy filling out the check form. Nobody, but NOBODY, was looking outside! Good Grief!

WHIZ QUIZ

1. Structural icing may be expected with:
   a. Temperature between 0° and —15° C
   b. Moist air
   c. Visible moisture and freezing temperatures
   d. All flight altitudes up to 15,000 feet
2. If instructed to hold on the 300-degree radial of an omnirange station, you should hold inbound on a:
   a. Magnetic heading of 120°
   b. Magnetic bearing of 120°
   c. Magnetic heading of 300°
   d. Magnetic bearing of 300°
3. Carburetor ice is not necessarily accompanied by the visual warning of clouds, rain or freezing temperatures but can occur in clear air with outside air temperatures well above freezing. TRUE or FALSE?.
4. Upon arrival over your destination on an IFR flight you are advised that the weather is below minimum; you should:
   a. Get a clearance from ARTC to proceed to the alternate
   b. Descend to the minimum altitude over the range and then proceed to the alternate
   c. Climb immediately to the emergency altitude
   d. Descend to the minimum enroute altitude
5. In 40° water without your poopy suit your limit of life expectancy is about 2 hours, but it becomes marginal (50 percent chance of death) after only:
   a. 1 hour
   b. 15 min.
   c. 30 min.
   d. 90 min.
6. What's the latest info on chamois inner coverings for APH-5 helmets?

See answers on page 48.

HEADMOUSE

Ways of Life

Dear Headmouse:

Saw a letter the other day complaining, and not without justification, about some of the things we have to live with in aircraft as well as equipment design. The endorsements, however, put the situation in a rather clear light and I'm passing them along for your comment:

a. "The problem presented in this letter is not restricted to one particular type aircraft, but is, to some degree, universal in all aircraft recently introduced in the fleet. Complicated design and, in some cases, poor quality control undoubtedly account for some of these accidents.

b. "Since major changes in already accepted airframe and engine design cannot be expected as a general rule, it is suggested that consideration be given to improving the following areas in an attempt to reduce material factors in accidents:

- Training facilities for squadron technical personnel;
- Facilities and equipment for testing and repairing equipment;
- Technical liaison between manufacturer, BuAer, and squadrons, including personal contact when necessary for demonstration;
- Improved quality control.
- "The pilot factors involved in accidents can only be reduced by intensive training and a continuous demand for a high degree of professionalism on the part of all naval aviators."

TYPE DESK

Well said! Developing ways to live with our problems, and to help prevent their recurrence in future designs sums up rather generally one of the prime missions of the aviation safety program. The finger of responsibility points to all hands.—

Very resp'y,
Headmouse

Shoot Seat & Light

Dear Headmouse:

There are two areas in which I feel we are dropping the ball in jet safety.

First, the combination of auto lap belt and barometric release currently employed in the majority of Navy jets is fine for high altitude, high speed ejection, but has too much time delay for low altitude, low speed ejections.

I would like to invite your attention to the "Safety of Flight Supplement" to the T-33A Flight Manual, published by the U. S. Air Force and dated 27 March 1958 (Serial T. O. IT-33A IEF).

It concerns a zero delay lanyard which connects the lap belt to the rip cord. This could be attached, by the pilot, for takeoff and landing and other low altitude, low speed flight. This would provide zero delay after separation from the seat and enable ejections considerably lower than we are able to succesfully make them now.

Secondly, I would like to know why rotating anti-collision lights are employed on all Navy aircraft EXCEPT jets.

It appears that the faster smaller aircraft would be in need of something as obviously useful as the rotating "Anti-Collision Light." It seems foolish not to go all the way in utilizing the benefits.

LCDR AvSaf Officer

Agree that the present combination for low altitude, low speed ejection could be improved. However, the zero delay lanyard is not feasible with present Navy automatic lap belts, due to the difference in basic operating principles. Although a zero delay lanyard will protect a pilot at low altitude, low speed, failure to disconnect it under any other conditions presents a potentially fatal hazard to the pilot.

The installation of the Rapex series Rocket Catapult is considered to be the ultimate answer to both zero altitude, zero speed, and high altitude, high speed ejections; or a combination of any speed, any altitude. The Martin-Baker seat is currently installed in the latest series F9F-8T aircraft. This seat provides low altitude, low speed escape with a minimum compromise of safety at high altitude, high speed.

Possible reasons for non-incorporation of the present type anti-collision light on jet aircraft are: Space limitations,

Have you a question concerning aviation safety? Send it in to Headmouse and he'll do his best to help.

weight restrictions, and structural incompatability.

Very Resp'y,
Headmouse

More Eyeshields

Dear Headmouse:

. . . I note from a recent ASO Logistic Bulletin that only 492 clear eyeshields from APH-5 helmets are being procured . . . how come?

ANYMOUSE

Your query was passed to ASO, who tell us that in addition to the 492 a contract for some 11,000 was awarded in April, and an additional 5,000 were also to be procured out of FY 1958 funds.

Very resp'y,
Headmouse

Shocked

Dear Headmouse:

After ditching my AD and being hauled into the angel by one arm and two fingers (the crewman, eager type, had mistaken one of my wild grabs as a thumbs-up), I settled down for a leisurely trip back to the ship.

I was shocked out of my reverie by that embryonic Edison of an aircrewman who, still just as eager, had plugged in my soaking wet hard hat (H-5) to say "how are you doing, sir?"

I am convinced I would have been better off swimming back to the ship and clambering up the sides than to have endured the mumbled up circus that followed my ditching.

SAD STORYTELLER

Wish you had indicated whether you were "shocked" literally or not? The danger of electrical shock under such circumstances is very negligible, but always a possibility. Since your soaked phones aren't likely to emit anything more than a gurgle, probably would be prudent of rescuemen to eliminate one more risk and avoid the temptation to plug you in; you can swim, but to us a rescue is a rescue!

Very resp'y,
Headmouse

Air Compressor Regulators

Dear Headmouse,

What progress has been made to procure regulators for the high side of air compressors R11C-150 and R11C-1185?

I understand these regulators were to be procured for installation on the high side of the air compressor so the operator can manually regulate the amount of pressure he requires for the item he is servicing.

AIRMINDED

A canvass has been completed of the various activities to determine the number of kits required. That information is now complete and the contractor has the kits ready for issue. These kits are now available. The stock No. for gage inflating device is R8G392-500N.

Very resp'y,
Headmouse

Discreet

Dear Headmouse,

Read your comments about using GUARD Channel in July APPROACH. Specifically, the paragraph stating that there are occasions when GUARD can be used with discretion . . . Guard may be clear to you, but to a birdman at Angels 35 the sum total of these "discreet" used of GUARD adds up to a constant line of chatter. Here at NAS Glynco we have found it impossible to guard GUARD and conduct air intercept training because of the "discreet" use of GUARD by Tower, Approach Control, and numerous throttle jockeys at low altitude utilizing GUARD in a "discreet" manner.

My strong recommendation is to establish a brief period for a daily radio check of Guard, the same period for all, and then restrict its use to bonafide emergency transmissions of vital necessity to prevent or report a disaster.

If this is not done, it is a military necessity for the Navy to establish its own emergency frequency.

CLYDE LEE, CDR, USN

1 yr. ago this issue

Design for Damage (Wheels-up problem) October '57, Page 16
We Gotta Go, Man (Outstanding R3350 operational record) October '57, Page 34

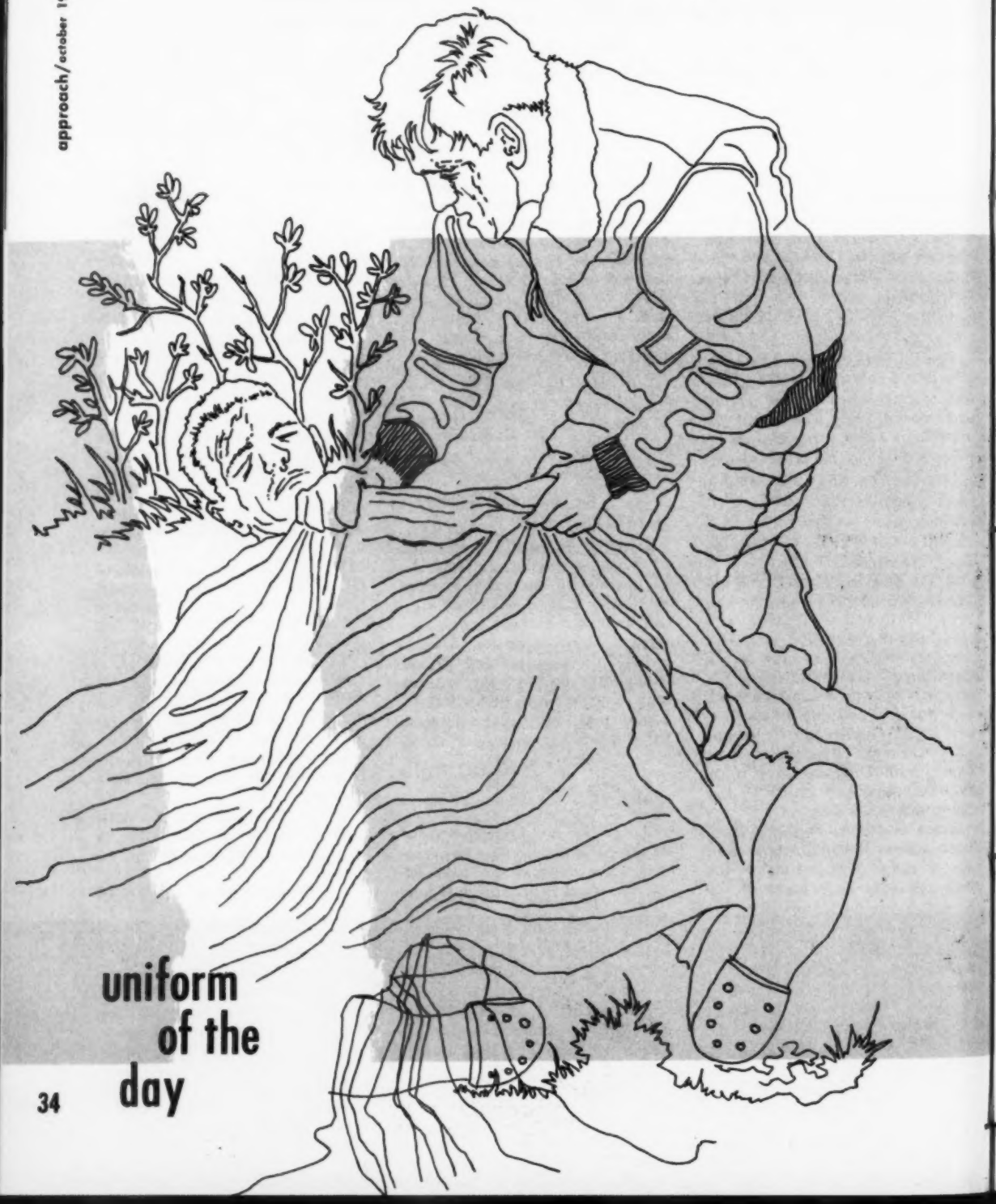
2 yrs. ago this issue

When Winter Comes October '56, Page 4
How to Interview October '56, Page 25
No Movies Tonight (Seaplane Tender) October '56, Page 32

3 yrs. ago this issue

Cold Weather Operations October '55, Page 28
Cold Thawts (Maintenance) October 55, Page 36
Snow Job (Removal notes) October '55, Page 41
Tilt (Gyro-horizons) October '55, Page 22
Noise October '55, Page 26

Many of these articles are as valid in accident prevention today as when they were originally published. Refer to your Safety Officer's or Flight Surgeon's files. Reprints or extra copies may be obtained by writing APPROACH, NASC, Norfolk 11, Va.



uniform of the day

SPORT shirt temperatures and bright sunshine at takeoff can easily lull you into flying without proper personnel safety and survival clothing and equipment. If you should crash or have to eject or bail out into the ice and snow, you'll need those gloves and boondockers.

The crash of an SNB into the side of a mountain earlier this year makes this point loud and clear. (The details of the in-flight mistakes and aspects of this hop were discussed in the August APPROACH, page 19.—Ed.)

Three hours and 20 minutes after taking off in working green uniforms, visored uniform caps and oxfords, the pilot and copilot were marooned on a desolate timbered mountainside in 8 to 10 feet of snow in below-freezing temperatures with more snow coming down. The pilot did carry his leather flight jacket along.

A few hours after the crash, the copilot succumbed of severe head injuries sustained in the impact. Although badly injured himself, the pilot managed to survive a harrowing 20 hours in the snow beside the wrecked plane until help came.

As for the crash, all the pilot remembers was the sudden loss of lights, then nothing. The next thing he recalls is that "it was snowing in my face."

Investigation disclosed that the plane had flown directly into a mountainside. Cutting a 150-foot path through the woods, the aircraft had sheared off trees up to 16" in diameter. The plane's right wing was torn off and the cockpit was completely demolished.

Irony of Fate

Although he became so engrossed in planning that he failed to observe flight progress, the pilot's concentration on the IFR plan in all probability saved his life. With his head bent forward as he wrote, he escaped being struck by the cabin roof when it caved in. As it was, he received serious facial and eye injuries, probably from flying glass and debris.

The only safety equipment in use during the flight was the safety belts and shoulder straps although the latter were not locked at the time of the crash. Had the straps been locked, the pilot's and copilot's injuries might have been reduced. *The fact that the shoulder straps were even in use kept the men from being thrown into the heavy timber.*

What Might Have Been

The accident investigation board noted that protective helmets would have minimized the pilot's injuries and could have saved the copilot's life. Gloves and approved flight shoes would have reduced lacerations, abrasions and the possibility of frostbite.

Miraculous

The Board's comment sums the situation up: "That the pilot survived in view of the severity of the conditions during and subsequent to the crash is indeed miraculous."

Any pilot reading the survival account in the AAR might ask himself, "If I had been in this man's place, could I have done as well?"

Handicapped by faulty vision (due to a fragment of plexiglass embedded behind the left eyeball which depressed it and destroyed depth perception), extensive bleeding, frozen feet and frequent periods of semiconsciousness, the pilot did what he could for the fatally injured copilot. He, himself, managed to exist until rescued the following day.

Strong Motivation

Again quoting from the AAR, "The pilot's survival account shows ingenuity. . . His motivation to survive was strong throughout, but small tasks became monumental toward the end of his ordeal. He planned, discarded ideas and planned again. He contrived to perform every conceivable task, however small, to keep busy."

After regaining consciousness some 40 minutes after the initial impact of the crash, the pilot tried to rouse the copilot. Failing to do so, he put a field bandage around the copilot's face and covered him with a parachute to keep the snow off. The pilot states that caring for the copilot during

Continued from preceding page

the first few hours after the crash got him over the hump and probably counteracted any tendency to panic at his own condition and circumstances.

Tries to Start Fire

To start a fire, the pilot used the night end of a signal flare from a mae west and his necktie dipped in the oil tank of the starboard engine. When he finally got his fire to catch, he burned anything he could find including RadFacs. Breaking branches off of trees for fuel was extremely difficult and painful because of his loss of depth perception.

"I couldn't see," he recalls. "I reached for branches and they hit me in my eyes."

He quenched his thirst by "sucking in snow." Had he been carrying a Personal Survival Kit PSK-2, he would have had rations and a number of other survival items, including dry matches. (At first thought one might think carrying PSK-2 or similar survival items on a routine reciprocating proficiency hop is unreasonable. Certainly under present stateside circumstances it is uncommon. But a closer look at the local flying area of many air stations, to say nothing of the route of many so-called routine cross-countries, clearly indicates rough country for forced landing or bailout. *See Adv., page 37—Ed.*

Copilot's Condition

When the pilot checked the copilot's condition at 1600, the copilot did not appear to be breathing and had no pulse. The pilot covered him up again, hoping the reason he couldn't feel any pulse was because his own fingers were too numb.

Rolling up in a parachute beside his fire hole, the pilot prepared to endure the night. His discomfort was increased by the loss of one of his shoes in his firemaking activities. (Both shoelaces had burst in the impact of the crash.)

"Each time I dozed off, I rolled downhill and would wake up and rub my feet," he recalled later.

Search Planes

At 0715 the next morning, he heard a plane. Knowing he had to walk to a clear area to be seen, he improvised puttees and wrapped his feet in panels ripped from a parachute. He put on a bandage taken from the aircraft first aid kit.

His first attempts to attract the search planes were unsuccessful. The smoke flare he set off leveled into the trees. He thought about setting fire to the detached gas tanks which were some distance away from the SNB, but his hands were too numb to open the flare pocket in a mae west. The first search plane flew away.

Later, he heard a second plane. By now his hands were warmer, and he had three flares out. He ignited one, but the plane flew off. The pilot's next thought was to use the two cushions he had been sitting on for snow shoes and move to a clear area.

Helicopter Rescue

After hearing a third plane and setting off another flare in vain, he saw a helicopter. He pulled a night flare, went further out on the mountain shelf, then lit the smoke portion. The helicopter crew saw his signal and dropped a double bowline to him.

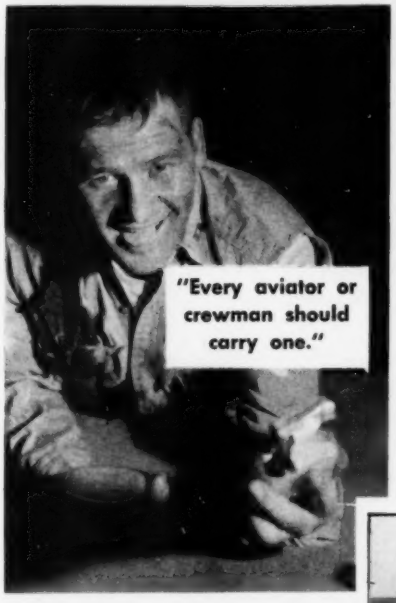
After a successful helicopter rescue, the pilot was rushed to a hospital by ambulance and his 20-hour ordeal was at an end.

Judgment Bows to Haste

The primary cause of this accident was the pilot's poor judgment in permitting the flight to proceed into instrument weather with an altitude below instrument minimums while on a VFR flight plan. An underlying factor was haste—haste to get going, to get to the destination, to take short cuts in order to make up for delays in takeoff.

But the elementary principle of self-preservation underscored by this whole experience is that ON EVERY FLIGHT, regardless of favorable weather conditions, route or destination, some thought should be given to wearing and taking some basic personal safety and survival clothing and equipment. If you haven't got it with you, you can't go back for it. ●

PILOTS-CREWMEN! BE FIRST TO GET IT!



The PSK-2 personal survival kit

WAS MADE FOR YOU

Yes, there's a bright future ahead for those who own a PSK-2 personal survival kit. The Bureau of Aeronautics Safety Equipment Division notes that these kits are survival kits, not home-auto first aid kits or toys for the kids. They have a lot of handy gear in them, but if you use it up on the beach or out in the boat, you won't have it when you need it most—In a *survival* situation. So when you get one, keep it intact. It's sealed around the center seam by a waterproof tape strip which can be removed and replaced a few times without losing its stickiness. And visible thru one end of the outer box is a list of the items within. Some items are only in one kit so look over the list before opening. If you haven't foolishly frittered the kit away, you'll find it invaluable in protecting your future after a crash or ejection. Get one today. Ask for it by name: The PSK-2 personal survival kit!

YOU TOO CAN SURVIVE—ONE KIT CONSISTS OF TWO UNITS IN A BOX

YOU PAY NO EXTRA FOR THE KITS

In fact there is NO charge at all — available at NO cost to you through local supply officers.

PUT ONE PART IN EACH LEG POCKET OF YOUR FLIGHT SUIT

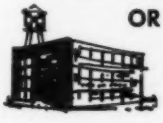
Curved to fit the body more snugly, each unit of the PSK-2 personal survival kit contains emergency medical supplies and food. The plastic containers can be reused and in a pinch will do for water containers. No well-informed aviator or crewman will ever feel completely dressed without the PSK-2 kit, once he has experienced the serenity this personal survival kit brings. Better than green stamps! Check with your squadron or supporting unit survival officer—he can get a squadron allotment. Though it's not a logistic item, the Stock No. is RH4820-611-0978-GA20.

Included in the kit are: Adhesive Plaster, Matches, Boullion Cubes, Chocolate Ration Bar, Bandage (Absorbent Adhesive), Soaped Tissues, Lipstick (Sunburn Preventative), Terramycin Tablets, and Tetracaine Ophthalmic Ointment.

Also, Compress (Gauze), Water Purification Tablets, Benzalkonium Chloride Tincture, Petrolatum Tube, Hacksaw Blade, Razor Blade (Single Edge), D-Amphetamine Sulfate Tablets, APC Tablets, Chloroquine Phosphate Tablets, and Sewing Material.

GET THE FACTS—GET THE KITS
Only one to a customer

SEE YOUR NEAREST SURVIVAL OR SUPPLY OFFICER



NSC—Home Office of PSK-2 KITS

Tell them you read it in

approach.

WINTER NOTES FROM YOUR flight

Poker Face

WHEN working outdoors in frigid temperatures, stop occasionally to check your face, hands and feet for frostbite.

Although frostbite may give you warning by numbness or a tingling pain, *it can come without any sensation at all.* Sometimes a man doesn't know he has a frosted face until a shipmate tells him.

Inside a Milk Bottle

REAR ADMIRAL Richard E. Byrd is said to have stated that the greatest hazard in arctic flying is loss of depth perception.

In polar regions, an object 10 miles away can look only a mile or two distant. Normal horizontal visibility in the arctic is 50 miles and under special conditions, up to 150 miles.

Low stratus clouds blending into a solid icefield produce a situation where the horizon cannot be determined. One pilot has said it is "like flying inside a bottle full of milk."

No Sweat

STRANGELY enough, one of the most common hazards of all in polar regions is sweating.

Heavy protective clothing, designed to keep a man warm while sitting still in frigid temperatures, is far too well insulated for walking on snowshoes or strenuous activity.

If you become overheated and work up a sweat, your clothing gets damp and loses its insulating value. Then, during a period of inactivity, you can suffer a chill and become a casualty. In addition, sweat will freeze either on your skin or your underclothing and you may freeze.

Before starting an activity, open up your clothing or take some of it off; then move fast enough to keep warm. In this way, you will avoid warming your body to perspiration level. Be ready, however, to put your extra clothing back on if the sun goes in or a wind comes up.

Another thought about protective clothing in winter—remember, it keeps heat out as well as in. Men trying to warm themselves beside their fires have been known to complain of cold feet although at the same time, the boots they were wearing were actually smoldering.

Sub Zero Zorro

WHENEVER there is a possibility of chilling due to a high wind, such as on the flight decks of carriers or on lookout watches, face masks should be used to give protection against the icy blast. Men using face masks should check regularly to make sure that the skin beneath the mask is not freezing.

Snowblindness

SNOWBLINDNESS is the seasonal name for sun-burned eyes. Next to staying indoors by the fireplace all winter, the best prevention is wearing sunglasses. In a survival situation, if you don't have sunglasses, improvise an eyeshield from a piece of cloth, cardboard or bark.

Symptoms of snowblindness do not appear immediately after exposure but a few hours later. The eyes feel sandy or gritty and begin to burn and water. They become inflamed, fail to focus and become increasingly sensitive to light. Snowblindness can cause intense pain.

If these symptoms are experienced, protection of the eyes from further exposure to light is a must. Bandage the eyes, preferably with a dark bandage or cloth. Cold, wet compresses under the bandage relieve the pain to some extent but must never be used when there is any danger of freezing.

Persons who have once had snowblindness are more susceptible to a recurrence during the weeks following.

Hard Facts on Hard Hat

DURING the last six months of last year, 178 pilots wearing APH-5 hard hats crashed, bailed out or ejected. A Naval Aviation Safety Center study of these accidents showed a very definite relationship between helmet retention and the degree of injury received.

	Helmet Retained (77%)	*Helmet Lost (23%)*
No Injury	59%	13%
Minor Injuries	37%	61%
Serious Injuries	4%	26%

Few of the helmets in this study had nape straps installed. With the use of a nape strap on the APH-5 helmet, the chances of retention in the event of crash, ejec-

surgeon

Your Best Friend

Are you personally acquainted with your flight surgeon?

If you aren't, how about dropping by one day soon and getting to know him better?

The safety and well-being of flying personnel is the most important responsibility of the flight surgeon.

And as the member of the aircraft accident investigation board most capable of supplying information about the role of human factors in accidents, he can be your best advocate.

The better your flight surgeon knows you, the more he can help you. And you can help him by passing along your firsthand knowledge of the problems concerning aviation safety.

tion or bailout increase. As a result, the chances of injury decrease.

And remember to secure the chin strap properly. Unless you do this, a nape strap cannot perform its designed function.

(Bulletin covering nape strap installation is ACSEB-13-57)

Hypo for Hypnosis

AWARE of a brand of hypnosis that can result from staring out of a windshield into nothingness or looking too steadfastly at the gages, an aircraft operator has added the following to his company's flight manual:

"Hypnosis in the cockpit can occur with night or instrument flying. The problem can also come up under certain conditions in normal daytime flying, due mainly to the length of flight, type of day involved, the drone of the engines and the hum of the radio equipment."

Burn Protection

PERSONAL safety equipment properly worn protected an ensign from serious and extensive burns when his AD-6 caught fire after a mid-air collision with another AD-6 just 25 feet above the runway in the landing pattern.

The young pilot's clothing combination of G suit and summer flight suit protected his body, arms and legs. His field shoes and his flight gloves which were scorched but intact took care of his feet and hands. His APH-5 helmet worn with the visor down saved his eyes and upper face. The paint on the APH-5 was blistered but the helmet and visor were otherwise intact. The pilot's face was burned from the lower half of the nose down over the area not covered by the visor. The area under the chin strap was not burned.

As soon as the burning aircraft stopped skidding down the runway, the ensign lifted his seat pan type parachute and life raft assembly free of the seat pan and dived headfirst out of the cockpit. His APH-5 helmet and visor further protected his face from contact injuries.

Handstand

When a P2V-5F crashed with a resulting flash fire in the cockpit and adjacent crew compartment (flight deck) and subsequently burned, none of the 11 persons aboard were wearing gloves. The pilot, copilot, navigator and plane captain suffered painful burns of the hands.

OpNavInstruction 3710.7A (Dec 56) recommends gloves for protection in just such situations.

Wearing gloves on takeoff, in flight and on landing is plain good sense.

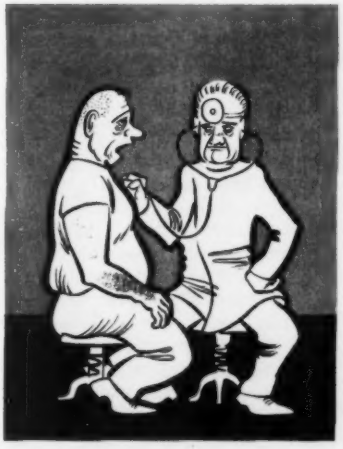
LSO Fatigue

FATIGUE on the part of an LSO can contribute to an accident as well as can fatigue on the part of a pilot.

During a scheduled refresher day carrier landing period, a pilot of an F4D-1 was given a late wave-off because of a foul deck and made an in flight engagement with the No. 4 arresting gear wire. The aircraft was slammed down on the flight deck with resulting structural damage to the forward fuselage area.

Investigation of the accident showed that although the ship was carrying out a week of intensive day and night air operations, only one LSO was available.

Fatigue delays reaction time. The LSO's decisions are equally as important and as split-second as the pilot's.



"The cockpit is getting too small."

KNOW WHEN TO SWITCH TO MANUAL

THE J65 fuel control incorporates a manual control valve which permits the pilot to maintain flight in the event of malfunction of the primary control elements. This feature, normally used on an emergency basis, has the general limitation of most emergency systems in that it may not be used with abandon but rather with due regard to the fact that the pilot's actions replace certain functions previously sensed or calculated by the primary system.

Flight Manuals stress the real possibility of engine damage (overspeeding and overtemperature) when in manual control and it is thought that the frequent reference to the warnings well may have raised doubts in pilot's mind as to the real merit of the manual control feature. Actually, the system is effective, safe, and when properly used, quite reliable. Similar controls have been used for years on the J42 and J48-powered F9F aircraft, and during Korean operations it was not uncommon for pilots to complete patrols on the manual emergency control rather than abort the mission. This same capability exists in the J65 manual control.

Flight and maintenance handbooks are being revised to eliminate confusion in the use of the manual control. The change will cover two major areas:

(a) allowing pilots to practice the use of manual control and,

(b) defining the different procedures in the case of partial power loss as opposed to complete flameout.

Most flight incidents are of the type in which there is some power loss but flame remains in the combustion chamber. In such instance, the engine should not be shut down but instead the power lever should be retracted to IDLE position and MANUAL then selected. Should there be an actual flameout, the engine must be shut down and descent made to a safe airstart altitude; below 20,000 feet. At this point, normal prescribed airstart procedures may be initiated.

It is imperative that all pilots become familiar with the manual control and recognize its capabilities and limitations. The present procedure for ground checking the manual control involves making one acceleration from 90% to 100% rpm. To allow pilots to

During Korea it was not uncommon for pilots to complete CAP hops on manual control. Reports indicate that some pilots have developed a reluctance toward using the manual fuel control switch in the event of in-flight engine emergencies. It isn't entirely clear why; however, discussions have indicated that some misunderstanding exists concerning operation of the emergency control system. NASC experience during "Project Glide" investigations revealed that many flameouts and accidents could have been prevented had pilots used the manual fuel control system.

gain experience with the manual control, a revised schedule has been formulated wherein the existing ground check procedure has been expanded to include accelerations to 100% rpm from 80%, 70%, 60% and idle. It is pertinent to note, at this point, that in the 70%-85% range engine conditions are near-critical and pilots must be careful to avoid compressor stall or engine overtemperature. The new procedure additionally removes the restriction on returning to primary control after having selected manual. Since incorporation of the 190544 control (one solenoid instead of three) it is possible to switch to primary smoothly and pilots may gain experience with the transfer, or

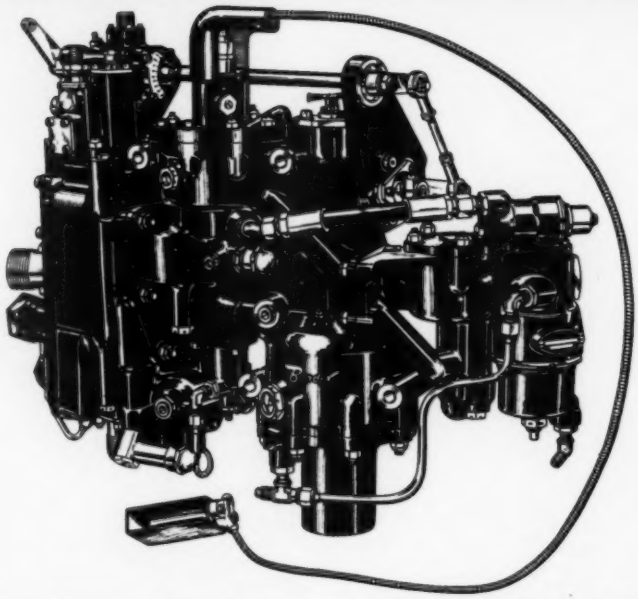
Continued next page

Continued from preceding page

investigate a suspected primary malfunction, without being required to stay on manual unnecessarily.

Since the manual control may be selected at any engine speed at altitudes below 6000 feet, the preflight check procedure has a greater degree of flexibility and better lends itself to varying conditions. When carrier-based, for instance, it may be preferable to select the manual control at idle and make only a small acceleration to keep the power level down. The revised instructions will allow this optional procedure, although pilots may prefer to accelerate the engine to full throttle from time to time to assure themselves that full thrust is available if needed.

When using the manual control, it is always easier on the engine if the pilot selects manual with the power lever in the IDLE position. *The actual RPM doesn't have to be IDLE*, but the power lever should be in that position. When flying at altitudes below 6000 feet, or during takeoff, time may not permit power lever retraction to IDLE and re-acceleration. In this case, it is possible to select manual immediately. This capability was shown during the manufacturers' demonstrations of the F11F-1 and A4D-1 airplanes, when the test pilots demonstrated successful switchovers at 5800-6000 feet with the power lever at military. The decision to switch should be made as soon as possible, however, as the switchover will be hotter and more violent as the RPM runs down. If the engine goes below about 80% rpm, compressor stall is likely to ensue unless the power lever is retracted.



The model TJ-L2 Gas Turbine Fuel Control Unit (Part No. 190544) used on the J-65 engine is a speed density type fuel metering device. Fuel flow is governed to maintain a constant engine speed at any set throttle angle regardless of aircraft altitude or temperature conditions. In case of failure of the normal fuel flow system the pilot may have complete and positive control of all fuel flow by shifting to MANUAL (emergency system). Although the emergency system operation requires constant pilot attention to prevent engine overspeeding, rich blow-out, excessive temperatures and similar conditions it can be manually controlled to maintain constant speed and temperature.

As the design of the primary control improves, it is expected that there will be progressively less need to use the manual control. Pilots should, on the other hand, clearly understand the manual control, when and how to use it, and recognize the substantial measure of continued safe flight available from the system under less-than-optimum conditions. 18

WHEELS-UP SAVES

Name	Station	Acft	Date
Brown, B. D., AC3 Tobias, D. A., AC3	NAS Gtmo	FJ-3	3-19-58
Chapin, J. O., AC1 Werner, R. J., AC3	NAS Gtmo	F11F	7-15-58
Bleakney, E. F., ACC Peicker, K. F., AC2 Zarzour, E. C., AC3	NAS Gtmo	FJ-3	7-14-58
Moran, D. E., AA Cresci, A., AA	NAS QuonPt	S2F	8-25-58
Madden, T. E., AC1	NAS Chincoteague	FJ-3	7-16-58
Greene, F. D., ABAN	NAAS Whiting	T28	7-9-58
James, A. J., ABAN	NAAS Whiting	T28	7-25-58
LTjg B. B. Weber Hedrick, G. L., AQ3	VAH-11	F9F-8	8-19-58
1st Lt C. V. Petersen	NAS Minneapolis	F9F-5	7-11-58

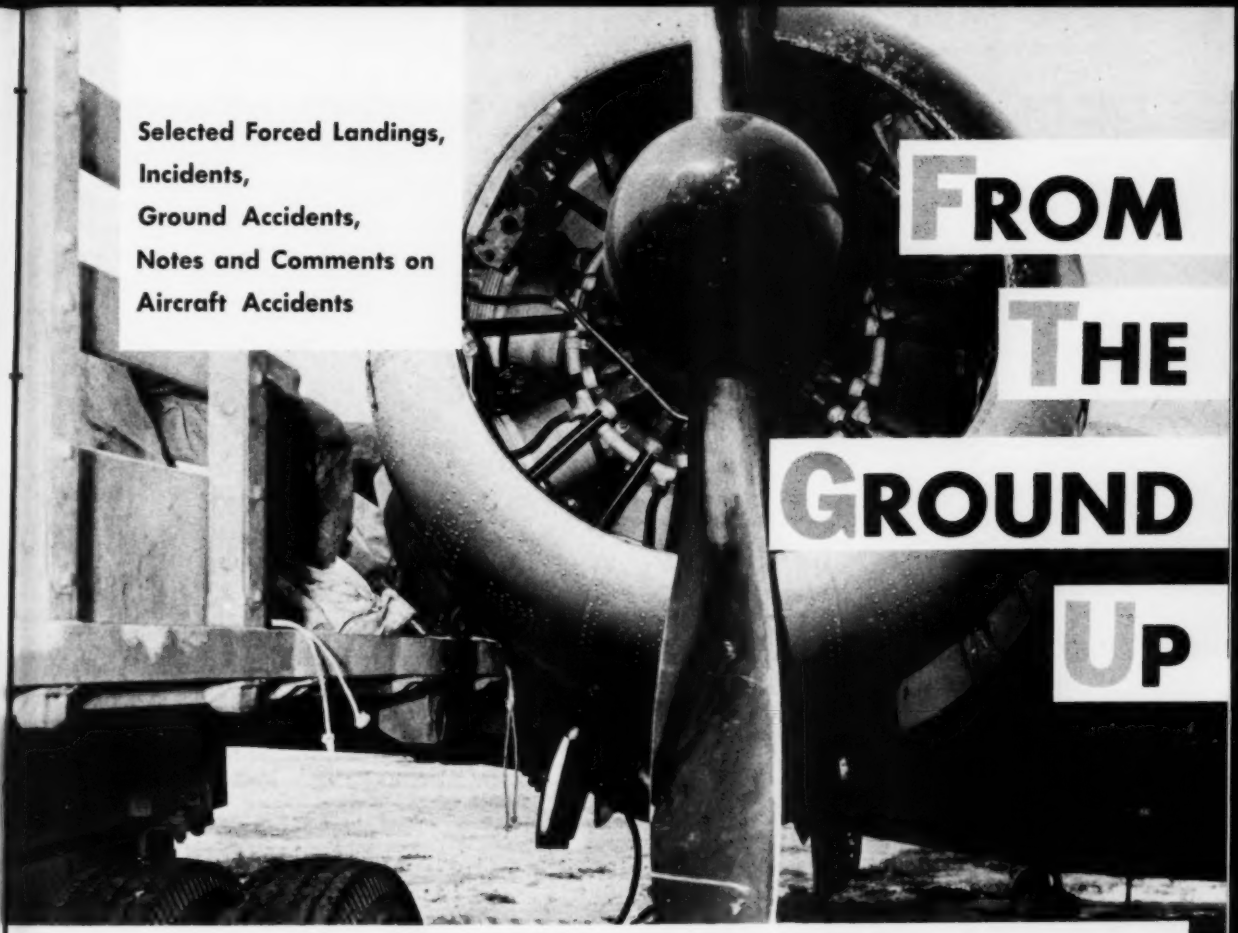
BOX SCORE

Wheels-up landing, unintentional, pilot induced

Total number of wheels-up landings 1956 (no wheel watches)	73
Total number of wheels-up landings 1957 (wheels- watches required)	41*
August 1957	10
August 1958	1
Total to date 1957	24
Total to date 1958	25**

* ** Wheels watches required but in most cases was either not posted or landing was not on duty runway.

Total Wheels Saves Reported Through 8-25-58: 305



Selected Forced Landings,
Incidents,
Ground Accidents,
Notes and Comments on
Aircraft Accidents

FROM THE GROUND UP

ON TOO many occasions maintenance is given 1 hour to do a 2-hour chore. We don't seem to have time to do the job right in the first place, *but there is always time to re-do it.*

The following, from Flight Safety Foundation's "Mechanics Bulletin," is a good philosophical approach to this problem:

"It is the most common prelude to disaster.

"It is the most illogical, the most unsatisfactory excuse for a mishap to either men or equipment.

"It is the most heartbreaking explanation of an accidental death or injury.

"There are reasons for this, of course, 'Hurry' is the frequent cause of trouble because we permit it on the job, confusing it with swiftness of movement. Speed, alacrity, expeditious action are all necessary for the efficient operation of every phase of aviation. And all are required on occasion, of the good mechanic. But 'hurry' is hasty action, unthinking or rash quickness of action. It is flurried and impatient, and too frequently it is touched by confusion, agitation and inaccuracy. It has no place in aviation.

"'Hurry' is the poorest excuse for a mishap because it defeats the very purpose of our work. We are on the job to do certain things which add up to safe, efficient maintenance or overhaul and on-time departures. There is neither safety nor efficiency in hurry. Actually, nobody wants us to hurry, even though they shout the word; they want the work done quickly, carefully and well, which is something quite different.

"And finally, 'hurry' is the saddest possible explanation of an accident because it is so unnecessary. Besides, the business of getting hurt because we think there isn't time to do the work correctly isn't very smart. It will take you much longer to heal up than it would have taken you to do the job properly (safely) in the first place.

"Better rule 'hurry' off the airport. Don't hurry,

Continued from preceding page

but do it right away."

Now let's take a look at the ground accidents, which were reported during the second quarter of 1958.

Forty-five vehicles collided with aircraft.

Starter units accounted for 16 damaged aircraft. Almost every command has instructions which state the driver must remain in the driver's seat while servicing aircraft; yet, 50 percent of these accidents were one-man operations.

Tractors being used with no intention to damaged 9 aircraft.

Forklifts, panels, jeeps, etc., were involved in 18 collisions with aircraft. In most cases *speed* and restricted visibility were the causes.

Portable equipment, such as ladders, jacks, hoists, chocks and tie-downs, was the cause of 27 incidents. Dominant among these was the improper use of chocks and tie-downs, which accounted for the loss of 2 aircraft over the side.

Movement of aircraft by motor tow or handling crews accounted for 43 incidents. Inattention of plane directors and squeezing aircraft through partially opened hangar doors were two outstanding causes.

Miscellaneous causes contributed 43 incidents, an increase over last quarter. Dropping fuel nozzles on aircraft, lowering ship's elevators without an elevator safety man's clearance—where one was assigned, and raising of powered antennas without checking clearance are two typical causes.

There were five injuries during this quarter, one of which was fatal, one critical, one serious and two minor.

Breaking down these 186 accidents into rates and times involved, we find that non-rated personnel were at fault in 50 percent of the cases, and the greatest number occurred between the hour of 1000 to 1200 and 1400 to 1600. Each month shows an increase in the number of non-rated personnel involved.

Cost of ground accidents for this quarter was over two million dollars. It should be noted that this report does not include accidents caused by maintenance personnel error.

The major factor points to hurry as the most destructive force concerning ground accidents. Expeditious action is necessary, as we have previously stated, but efficiency is foremost. Do it as quick as possible, but be sure you do it right. ●

UP-AND-LOCKED — An F9F-8T collapsed its nose gear on landing following several unsuccessful attempts to lower and lock the gear in flight.

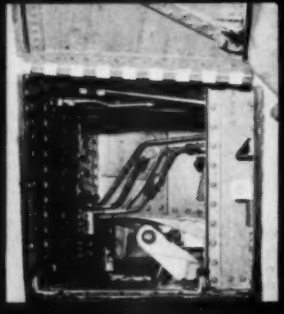
An investigation revealed that canopy ground lock rods and plenum chamber door locks, carried as loose gear in the space provided for the port ammunition can, had jammed the nose gear wheel down lock linkage, located at the lower end of this space.

Regardless of weight, size, and description of cargo carried in aircraft, proper stowage is important to flight safety. When permitted to shift during flight, heavy cargo can seriously change the CG of the aircraft, creating problems in trimming; thus affecting fuel consumption and physical effort. Such situations can also lead to aircraft damage, injury to personnel, and in extreme cases may cause an accident.

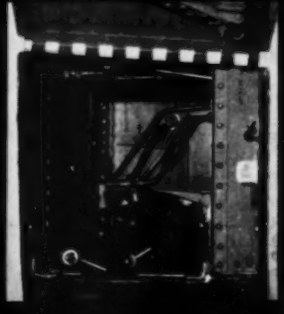
Small articles thrown carelessly into aircraft can be just as dangerous as improperly stowed heavy cargo. [See "Isolated Case," Aug. 58.] This equipment, which can easily jam controls, is usually of the type needed for securing the plane, such as battens, tie-down reels, chocks, wing locks, and jury struts. When not latched down or stowed in adequate containers, these articles will float haphazardly about decks and compartments.

The situation becomes even more serious when loose gear is stowed in unauthorized spaces; for these usually contain equipment sensitive to damage or susceptible to jamming.

Units operating aircraft can prevent accidents and incidents caused by improper stowage practices by the establishment of instructions that define the what, how, where and when of gear stowage.



nose gear down lock linkage visible in bottom of ammo compartment



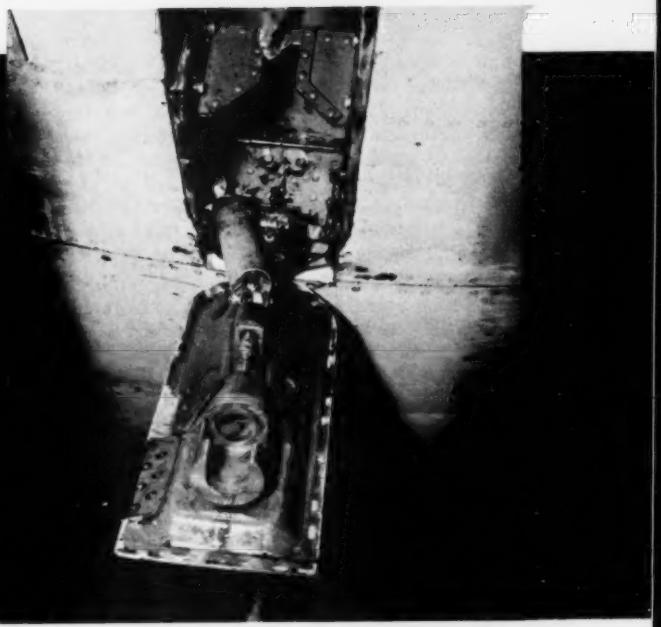
was jammed by loose canopy ground locks and plenum chamber locks

ONE WAY SKAGS—An F9F-8 was pushed aft onto the No. 3 elevator when the skag struck a deck protrusion stopping the aircraft abruptly. On the flight deck the skag was given a quick visual inspection by a petty officer who gave a thumbs up to the pilot. After being launched the hook could not be extended fully, and the aircraft was diverted to the beach. Upon inspection it was found the skag had been forced into the fuselage damaging the hook assembly.

It is recommended that:

When possible, F9F-8 aircraft be pushed forward when respotting.

When F9F-8 aircraft have to be pushed aft over a raised portion on the flight or hangar deck a shovel be placed under the skag to prevent contact with deck protrusions.



Damage to F9F-8 hook assembly, right, resulted when the skag struck a deck protrusion while being pushed aft

FLIGHT DECK DRIVING—An FJ-3M was tied down in a forward center-line spot during a general, in-port, turn-up. The driver of a GTC-85 starting unit engaged in starting a line of A4Ds on the port bow backed into the tail of the FJ damaging the port elevator.

The cause of the occurrence was inattention on the part of the starting unit driver. It is felt that this particular type of accident, although minor in this case, has many times resulted in substantial damage to aircraft as well as injury to personnel. For this reason it is strongly recommended that all drivers of vehicles on the flight deck be the most capable and temperamentally suitable that are available.

In addition, drivers of NC-5 Air Start Units and other vehicles operating in the immediate vicinity of aircraft should be carefully instructed to make use of additional flight deck personnel to direct and monitor a close or difficult approach to aircraft.

IT CAN HAPPEN AGAIN—Investigation of an aircraft refueling fire showed the Parker fast-fueling nozzle, Part No. 1326-522701M, sequence rod bent and underside of opening handle gouged. This condition permitted the nozzle to be removed from the aircraft adapter without the opening handle being in the full OFF position.

An advisory from ComAirPac recommends:

► That all activities inspect all nozzles, sequence rods, handles and adapters for incipient failure and possible malfunction.

► When locking on aircraft insure outer shell is rotated to full clockwise position. This insures sufficient rod clearance and will prevent binding and gouging of the inner race opening handle.

QUICK FIX—pilot's statement: "Trouble with the right brake of a TV-2 was first experienced upon departing the line. Repeated checking to ensure that brakes were unlocked failed to relieve force. By advancing throttle to approximately 85% it was possible to depart the line, but with maximum pressure on left brake to hold aircraft straight. After rolling along apron, right brake again forced plane to right. A 360-degree turn was executed and repeated taxiing up and down apron was accomplished in an endeaver to determine whether condition of right brake would continue. Apparent temporary remedy of situation was accomplished by the taxiing efforts. Plane was taxiied to end runway 3 for takeoff.

"Immediately upon application of 100% power for takeoff, it became apparent that right brake again was functioning incorrectly. Left brake was used intermittently to keep aircraft straight. Takeoff run was aborted after approximately 1500' when it became obvious that sufficient speed was not building up to effect a safe takeoff on runway remaining.

"Plane was taxied off runway at third intersection and shut down. Smoke was noted coming from right brake and wheel assembly. Aircraft was secured and evacuated."

The right main wheel was removed for tire

Continued from preceding page

change, and the wheel was installed with the inner wheel bearing missing. This type of line maintenance is now covered by the work order system which requires sub-assembly and final assembly inspection by an inspector before release for flight operations.

Endorser's statement: "The conclusion reached as to the cause of the ground incident and the corrective action initiated by the reporting custodian is well taken, however, this in no way excuses the poor technique and judgment displayed by the pilot in attempting a takeoff after repeated warnings that the right brake was not functioning properly. It is evident from the pilots' statement that he had ample warnings of events to come but failed to heed these warnings. For the price of a few minutes required to return to the line and have the brake inspected, this incident could have been prevented. This again points up the fact that a pilot must display, at all times, a professional approach, especially so when encountering mechanical difficulties, and not let his desire to fly dictate his action."

NIGHT LOADING—While using a forklift to load equipment on board an R5D in an aircraft parking area, a mechanic attempted to drive by an R4D-6S parked nearby. He misjudged his clearance and drove the forklift into the wing tip of the R4D.

Cause of Occurrence. (1) Driver of the forklift failed to observe his proximity to the wing tip of the R4D and allow sufficient clearance to drive the forklift past the parked aircraft. (2) Available floodlights were not requested or used to illuminate the area involved.

Corrective Action Taken by Reporting Custodian. (1) Drivers of vehicles which operate in close proximity to aircraft at this command are instructed through a continuing program to exercise extreme caution when operating near aircraft. (2) Personnel engaged in aircraft loading activities are directed to limit such operations to daylight, when possible, and when necessary to conduct such operations at night to use floodlights or other available lighting facilities.

Downwash turbulence of chopper rotor damaged both elevators

CHOPPER DOWNWASH—The pilot of HR2S-1 made an approach and landing on the parking ramp. The approach was made upwind of an R4D-5 at a horizontal distance of approximately 100 feet and at an altitude of 20 to 25 feet. The R4D was parked tail into the wind. The turbulence from the rotor created a down-load on the R4D elevators causing the damage to both elevators. The R4D was tied down, normal flight control battens in place and unoccupied.

To prevent future accidents of this type, a change to the Airfield Operations Manual has been promulgated to prevent large helicopters from landing or taking off in close proximity to the MCAF ramp and aircraft parking area. The procedures for the operation of small helicopters in this particular area have also been revised.

A 70- 75-knot downwash is created while air-taxiing and in a hover. In this case normal clearance from the R4D was maintained during the approach; however, this proved inadequate because of the wind effect.

Hydraulic fluid from broken hydraulic line became ignited.

STACK LIGHT-OFF—While taxiing an S2F-1 prior to flight, smoke was noticed coming out of the port engine nacelle. The emergency fuel and oil switch was closed, the engine fire extinguisher actuated and the aircraft abandoned. After removal of cowling, portable fire extinguishers were utilized to extinguish the fire.

The QEC assembly received fire damage to fuel, oil and hydraulic lines, electrical leads and hydraulic transmitter.

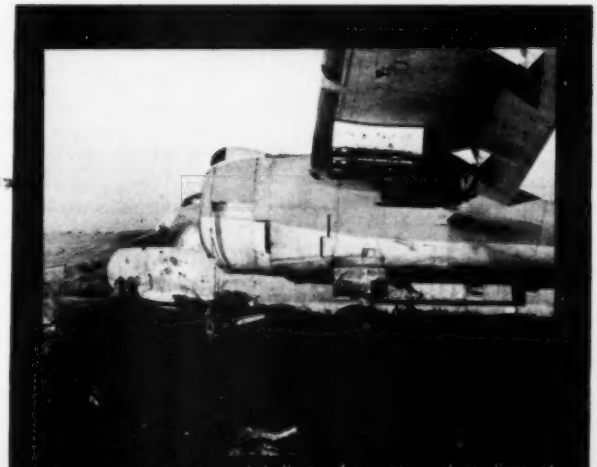
Cause: Hydraulic pressure line pulled loose from fitting on pressure side of transmitter allowing hydraulic fluid to escape into engine accessory section (See photo above). The source of ignition of the hydraulic fluid, while not conclusively proven, appears to be via vapors being ignited at the upper stacks.

BINDING CABLES, FJ-3—It is possible to inadvertently route the right-hand rudder cable, part no. 194-52430 over bend in Hydraulic Line, part no. 194-58822-17, while the tail is off the aircraft. After tail installation, rudder movement will chafe the line. A slight binding is not obvious by rudder movement from the cockpit.

The reporting unit, VF-173, recommends inspection of cable routing at inspection door, part no. 181-31747-6 after tail installation, and on preflight, move the rudder by hand checking for rubbing noises and slight binding.

OIL SIGNS—Reports of aircraft accidents and forced landings resulting from R3350 engine cylinder failure indicates that insufficient emphasis is being placed on determining the source of oil leaks when sign of leakage is noted. According to the Bureau of Aeronautics in some instances, the engines have had a history of oil leakage for several flights before complete failure occurred. In other instances, the engine had shown a sharp increase in oil consumption prior to failure.

All activities should emphasize the necessity for locating the source of oil leaks before an aircraft is released for unrestricted flight. In addition, all pilots and maintenance personnel should be advised that a sharp increase in oil consumption is cause for concern and every effort must be made to determine the reason prior to further flight.



Loose screws in airspeed indicator froze airspeed readings at 100 to 120 knots

SCREW LOOSE—The day following the accident the two airspeed indicators were removed from the aircraft and were inspected and bench tested. Inspection of the pilot's indicator revealed that both screws holding the face of the instrument were loose and protruding above the face. The bench test showed that the needle would bind on the screw heads at variable places in the area between 100 and 120 knots.

No discrepancies were found in the indicator removed from the copilot's side. A review of the past maintenance history of the aircraft revealed no recurring discrepancies that could have contributed to the accident. There were no previous discrepancies on the pilot's airspeed indicator.

Clipboard

JTTU

OFFICERS who are not currently qualified in operational jet aircraft may request assignment to 5-week JTTU course. Assignment will be made within existing quota limitations and at the completion of a shore duty tour. Letter requests are not required, but rather indicate your choice on the NavPers 765a card.

Short Landing Hazards

NO ONE intentionally lands short, but it is happening. With winter already here, the following items may help you avoid landing short:

a. Ice on wings and empennage increases your weight.

b. Ice on runways may make you try for a touchdown too close to the end of the runway.

c. Snow cover on the field can reduce your ability to distinguish the end of the runway accurately.

d. Anticipate wind eddies at your touchdown spot caused by buildings and abrupt rises in terrain.

e. Rapidly rising terrain at the runway's end can create optical illusions.

f. Most errors are made at the beginning of the final approach, i.e. incorrect power settings which cannot be corrected sufficiently at the last minute; getting on the backside of the power curve during an approach.

g. The most critical time and distance during an approach is that from the inner marker to the end of the runway.

h. Check airspeed indicators for inconsistent readings that can be caused by water, ice, or leaks in the system. Report these erroneous instruments promptly to the proper people.

De-Winterizing

LAST winter helicopters were used to blow heavy snow off telephone lines in Eastern Washington, thus preventing damage from the heavy snowfall.

—*FACT SHEET, Nat'l. Avn. Ed. Council, May-June '58*

Winter Problem—Jet Glace'

WITHIN a year or so jet transports will have joined the ranks of the scheduled air services. With their introduction, comes a new set of considerations, among them the following: "Melting of snow by jet exhaust, followed by freezing of the surface, in some cases would provide zero braking friction for other landing aircraft."

As an article in a recent issue of "Flying Safety" puts it, "the B-47's exhaust gas strikes the ground about 15 to 25 feet behind the tailpipe. This melts the top of the snow or ice behind the airplane. While taxiing down the runway with the tail into the wind, water vapor, caused by the jet blast melting the snow and ice, blew over the cold wing and immediately condensed and froze in the form of frost or rime ice. It looked like regular frost."

In another case cited, "A jet taxied up and down the runway just prior to another aircraft's landing. The jet blast, directed toward the runway, had caused the top of the compacted layer of snow to melt and then freeze again in the form of clear, slick ice. Naturally, this makes good sliding! The landing aircraft rolled and slid 8450 feet before coming to a stop."—*FSF Accident Prevention Bul.*

ANSWERS TO WHIZ QUIZ, Page 31.

1. C
2. B
3. True
4. A
5. C
6. ACSEB 3-57A gives all the latest info, and ACSEB 5-57 gives complete Stock No. nomenclature of the entire helmet.

Airlift Fire Extinguisher

The Chief of the Bureau of Aeronautics plans procurement of especially fabricated dry chemical fire extinguisher units each equipped with a cargo sling for transportation by helicopter, to the scene of an off-base aircraft accident. Each unit has a total weight of 600 pounds.

Units having in service the type of helicopter capable of transporting this unit to the scene of an aircraft accident were asked to report same to BuAer (SE-743).

Flatley Report Coming

The Flatley Report will soon be mailed to all CAGs. The report is a comprehensive study of the problems involved in introducing the "Big Six" to the Fleet. The report contains many recommendations, which, because of their classification, cannot be discussed here.

COLD WEATHER REFERENCE SOURCES

Cold Weather Training Films

FA 7923	How to Use Cold Weather Clothing
MA 2627	Land and Live in the Arctic
MA 6659	Task Force Williwaw
MA 6661	Exercise Musk Ox
MA 6803	Exercise Yukon
MA 6948	Survival on Arctic Tundra
MA 6965	Summer Movements in the Arctic
MA 7450	General Effects of Cold on Man
MA 7375	Combat in Deep Snow and Extreme Cold
MH 7491	Cold Weather Training, Indoctrination and Survival
MA 9282	Cold Weather Uniforms
MA 9287	Operation Blue Jay
MB 5394	Exercise Eskimo
MB 5395	Exercise Polar Bear
MC 6376	The Secret Land
MN 2644	Cold Weather Operations of Aircraft
MN 6666	Canadian Arctic Operation
MN 6772	Cold Weather Operating Problems
MN 6912b	Navy Sierra Snow Test
MN 7419a	Ships, Men and Ice
MN 7439	Cruising the Northern Seas
MN 7458b	Mark IV Exposure Suit
MN 7478	Ski Jump No. 11
MN 7818	Survival in the Aleutians
MV 8381	Survival on Polar Sea Ice
MV 8384	Survival on the Ice Cap
MV 8231	Polar Navigation
MN 119a	Ice Formation on Aircraft
MN 7474a	Ground Handling of Aircraft in Cold Weather (General)
MN 7474b	Ground Handling of Aircraft in Cold Weather (Taxi, Tow and Servicing)
MN 7474c	Ground Handling of Aircraft in Cold Weather (Preparing for Flight)

Aviation Clothing and Survival Equipment Bulletins (ACSEBs)

6-54	Electrically heated flying suits—Inspection of internal lead wires
35-54	Suits, flying exposure, Mk IV and Mk III (modified) Instructions for wearing
36-54	Suits, flying, anti-exposure, Mk IV and Mk III (modified) Instructions for fitting
36A-54	Suits, flying, anti-exposure, Mk IV and Mk III (modified) Instructions for fitting (additional)
40-54	Suit, anti-exposure, Mk IV and Mk III—Alternate methods for wearing
46-54	Mark IV anti-exposure flying suit; Modification and repair of insulation liner
46-54	Suits, anti-exposure; Quick donning for aviation personnel
6-56	Suit, flying ,anti-exposure, Mk III; Continuous wear
7-56	Suit, flying, anti-exposure Mk IV; Instructions for fitting, Use and care

Aviation Circular Letters

107-47	De-icer boots; Care and maintenance of
44-50	Aviation survival program

Technical Orders

30-55	Use of carburetor heat
34-52	De-icing fluids; Use of
36-49	Use of carburetor heat
5-56	Anti-icing and De-icing fluids for windshields, propellers, and carburetors; Use of

Technical Notes

16-51	Instruments, oil pressure gages; Cold weather operation of
38-52	Instructions for cold weather operation of naval aircraft
5-55	Turbo-jet engine icing
1-56	Ice and frost on exterior surfaces; aircraft fluids for removal and prevention of
83-42	Operating and maintenance information on Herman Nelson aircraft engine and shelter heaters

Sense Pamphlets

NA-00-80Q-11	Aleutian Sense—1944
NA-00-80Q-13	Arctic Sense—1944
NA-00-80Q-31	Carrier Cold Weather Starting Sense
NA-00-80Q-32	Carrier Cold Weather Flying Sense

General Training Publications

NA-00-80T-32	Polar Guide
NA-00-80T-60	All-Weather Flight Manual
NA-00-80T-1	Ice Formation on Aircraft

Instructions

OPNAV Inst. 3710.12	Ice Formation on Aircraft
BuAer Inst. NA 13.1	Parachute Harnesses for Use in Cold Weather

For more winterized information—see next month's issue!

October—whether it be the eighth month of the old Roman calendar, or the tenth month of ours—marks the advent of cold weather and the time to check equipment, review procedures and generally take inventory of your cold weather capabilities.

A good starting point is the list of references on the inside back cover.

Even though the local op area may be a haven for the coral beach and palm tree set, your cold weather preparations cannot be eliminated. For when you fly north those cumulus of fair weather turn into "cumulo ice cube-is." And check de-icing and anti-icing equipment before takeoff (include cabin heat on your check; a frigid pilot is apt to cut corners). It may be that you'll have to land on icy runways, too, with an increase in landing roll.

With sea water temperatures drifting down to the danger temperatures (and some say 69° is as dangerous as 59°), carrier flying and poopy suits become like ham and eggs; if you have one you need the other. If you haven't already, October is the month to get fitted with your survival suit.

Low temperatures and icy winds also bring problems to line maintenance personnel. Portable shelters or windbreaks pay dividends when working an aircraft parked in the open. Since both aircraft and aircraft servicing vehicles lose traction the same as any other vehicle on slush or ice, caution "drivers" to move more slowly and carefully during winter conditions.